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SOME WAR ASPECTS OF MEDICINE

REPORT OF THE CHAIRMAN OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

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Minorities sponsoring causes in which they believe make most of the policies of democracies. The doctor believing in himself and in medical work has through his organizations interested himself in medical education in order to give assurance that those who care for the sick know their business. One of the striking chapters in the history of education covers the part played by the American Medical Association in influencing the development of sound medical education in the United States. If the public had had to wait for conditions to develop so that a majority would interest itself in seeing that good medical schools were provided, we would have but few of these schools today. It was the understanding of the physician and his willingness to take the responsibility and to do the work that has made possible this Council with its influence on medical education and hospitals.

Over the last few decades every one will admit that there has been a steady improvement in medical schools, in the kind of training received by the doctor, in the hospital training of the young physician and in the hospitals themselves.

During the past year the activities of the Council have been along the usual lines. We can report that most of the medical schools have made substantial recovery from the difficulties in which they found themselves as a result of the depression. All of them are handicapped, as are the universities and research institutions, by the declining income that has resulted from the lowered interest rates which are now prevailing. Even though the processes of medical education have become more expensive, owing to the increase in the facilities required for modern medical training, there has been sufficient financial support to keep abreast of the best in medical education as far as the majority of our institutions is concerned.

The reports received from a large number of medical schools and follow-up inspections of others indicate that, as a result of the Council's survey during 1934-1936, substantial improvements have been and are being made. Where facilities have been inadequate the size of classes has been reduced, entrance requirements have been raised in a certain group of institutions, the teacher-student ratio in the basic medical science departments is now 1:8 as compared to 1:11 in 1934, clinical facilities have been improved, budgets have increased, and curriculums have been revised.

The Council has undertaken a program of cooperation with the various specialty boards looking toward the establishment of uniform standards in the field of graduate medical education and the elimination of unnecessary duplication in the inspection of hospitals which undertake to train residents in the various specialties. Negotiations have already been completed or are under way with thirteen boards. Official information is secured from hospitals on forms printed in triplicate so that one copy may be retained by the institution, one copy by the Council and one by the special examining board concerned. The actual inspection of the hospitals is carried out by members of the Council's staff. Copies of the reports of these inspections are likewise transmitted to the examining boards. It is expected that in the final evaluation of residencies and fellowships the conclusions of the Council and of the boards will be identical, so that it may be said that any institution approved by the Council will be equally acceptable to the specialty boards.

Conferences have been held between the Trustees of the American Medical Association and the Board of Regents of the American College of Surgeons, and also between members of the staff of the Council on Medical Education and Hospitals and the administrative staff of the College of Surgeons. These conferences have resulted in closer cooperation and collaboration in the collection and publication of hospital statistics.

According to the latest figures compiled there are 6,226 hospitals registered by the Council, having a bed capacity of 1,195,026 and 58,764 bassinets, 9,879,244 admissions and an average daily census of 996,483. Of these 736, with 7,998 internships, are approved for this training, and 555 are approved for 4,709 residencies. In addition, the Council lists 154 schools of laboratory technic, 16 schools offering courses in physical therapy, and 6 schools of occupational therapy, all of which are approved by the Council.

Since the first classification of medical schools and the publication of the Carnegie report there has been probably no five year period which has witnessed such activity and progress in the field of medical education.

Medical licensure statistics published in 1940 revealed that 6,043 physicians were licensed (for the first time) to practice medicine. Here is no indication of a dearth of doctors. Quality, however, is more important than quantity, and in this respect the situation is less satisfactory. One hundred and ninety-five graduates of unapproved schools were admitted to practice in thirteen states. A still more serious degradation of the standards of medical practice results from the trend in recent years to abolish the restrictions which have heretofore

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governed the practice of osteopathy. In seven states medical licenses have been issued to 118 osteopaths who are not graduates of any medical school. During the year also 925 licenses have been issued to graduates of foreign faculties of medicine.

A revision of the "Principles Regarding Graduate Medical Schools" was ratified by the House of Delegates in June.

RESPONSIBILITIES OF THE COUNCIL

Acting on the request of the Reference Committee on Medical Education of the House of Delegates last June, the following resolution was presented and approved, clearly indicating to the public and to the medical profession the responsibilities of the Council in the field of medical education and the channels through which these responsibilities are to be discharged:

WHEREAS, When the American Medical Association was organized in 1847 the following statement was contained in the Plan of Organization: "Inasmuch as an institution so conducted as to give frequent, united, and emphatic expression to the views and aims of the Medical Profession in this country must at all times have a beneficial influence and supply more efficient means than have hitherto been available here for cultivating and advancing medical knowledge, for elevating the standard of medical education, for promoting the usefulness, honor, and interests of the Medical Profession, for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men, for exciting and encouraging emulation and concert of action in the profession, and for facilitating and fostering friendly intercourse between those who are engaged in it"; and

WHEREAS, In successive years the Committee on Education reported on existing conditions and made recommendations for the sound development of medical education in this country; and

WHEREAS, Immediately after the reorganization of the American Medical Association in 1902 more active measures were taken to examine and appraise the existing facilities for the training of physicians, leading, in 1904, to the establishment of the Council on Medical Education as a standing committee of the House of Delegates; and

WHEREAS, The Council conducted the first comprehensive survey of medical schools that was ever made and later secured the assistance of the Carnegie Foundation for the Advancement of Teaching, which sponsored the extraordinarily influential Flexner report; and

WHEREAS, Over a period of thirty-five years the Council on Medical Education and Hospitals has, through its inspections, reports, and published classifications, steadily raised the standards of medical education and practice; and

WHEREAS, Throughout the period of its existence the Council has sought attainment of objectives equally beneficial to the medical schools, the hospitals, the interns, the medical profession and the public; therefore be it

Resolved, That the House of Delegates reaffirms its approval of the activities of the Council; and be it further

Resolved, That the Council is hereby directed to continue to discharge those functions outlined in chapter IX, section II, of the By-Laws, namely (1) to investigate conditions of medical education including premedical, undergraduate and graduate medical education, hospitals and associated subjects and to suggest means and methods by which the same may be improved; (2) to endeavor to further the realization of such suggestions as may be approved by the House of Delegates.

The faculties of medical schools have been classified with respect to availability for medical service. An alphabetical list is now in the possession of the Surgeon General of the Army and the surgeon of each corps area.

The Council has now in process of preparation part II of the Council's study of graduate medical education in the United States. This volume will deal with institutional apprenticeships; namely, internships, residencies and fellowships.

NEW CONDITIONS TO BE FACED

We now face an entirely new set of conditions. With the various emergencies and the changes that they have brought about in finances, as well as all sort of controls, and with compulsory military training under the Selective Service Act of Oct. 16, 1940, we are in the midst of forces that may bring harm to all that has been built up through the past five decades unless great care is taken.

Under the Selective Service regulations, except for the current year, there is no exemption provided for medical students, nor have we protection in the law for instructors, residents, interns, hospital staffs and faculties of medical schools. What happens to them depends on the gambling chances of a numbered Selective Service and the wisdom or lack of wisdom of the draft boards. Because of inattention or for some other reason we have neglected to give the protection to medicine that was found requisite through our own experience during the last World War and that has been generally accepted by belligerents in the present war as a sign of reasonable common sense.

It would seem about time that those who believe in what medicine can do and in its destiny should again take hold of the situation and give the public and the soldiers the protections that in a long war can come to them only by maintaining our student bodies in the medical schools, our faculties of medicine and our staffs in the hospitals. There should be no element of chance in this matter. We should do what we have to do with devotion to the requirements of our country in time of strain; but we as medical men should have the voice as to what is important to protect in medical training and in the maintenance of our medical institutions.

Certainly the medical care given a modern army is of the utmost importance. We need only remember that a century and a half ago those European armies that had organized and efficient medical care were able to keep their fighting forces available for action with less human wastage than their opponents. From that time on the doctor began to count in offensive military programs. With the development of modern medical science the trained physician has become indispensable in military affairs, not only in the care of the wounded and sick, but also from the standpoint of prevention of disease and for the selection of those men capable of the strain of military life.

So indispensable has become the doctor that now when we speak of bringing a hundred thousand men into military service we take it for granted that a certain percentage of these men will be trained physicians and others connected with medical and hospital services. The European nations now find under the exigencies of so-called total war that the care of the civilian population must be guided to a considerable extent by the men of medicine. The dislocation of large groups in the population, the spread of diseases associated with deprivations of food and with famine, and the spread of contagious diseases all require the expert in the laboratory as well as in the clinic and the hospital.

Our country is well entered on a great mass operation of defense. This extends certain of our activities and limits others, but in no way does it change the essential fact that the defense of a great democracy will require as many, if not more, thoroughly trained medical men as in the times of peace. While we can drain off a certain number of our active practitioners into the service of the army, navy and public health, we cannot diminish the numbers taking medical training, nor can we speed up that training beyond a certain point without obtaining an unsatisfactory result.

In other words, the present crisis demands more and better and more up-to-date medical students if we are to face the future with equanimity and without undue concern. We know from long experience that the process of selecting young men and women each year to be recruited by our medical schools is not a simple one. Only a certain percentage of our young people are fitted by temperament, intellectual capacity and physique to take up the arduous study of medicine. We must guard against having them diverted into some form of required military service so that they are lost to medicine. If those in authority in this country are wise they will make provisions through legislation so that no medical student can be drafted or volunteer, and so that those who are proposing to study medicine are given adequate trial before they are drafted into some other line of duty. After the first hospital year (which is really a part of medical education) is completed then the young physician can be relieved for such military or civilian service as seems most appropriate for his qualifications or as most needed. It will be difficult to maintain the further training in the hospital which is required for those who are to be specialists, but provisions for this should be made and authority given to those who head our medical institutions to save from the waste of ordinary military service those who show special skill in either the laboratory or the clinic. It may be that the best procedure would be for them to be drafted and then sent back to the medical institutions or hospitals concerned.

For years we have talked about preventive medicine. We have built up our whole scheme of medical practice in relationship with the public health authorities, so that prevention is a part of the everyday practice of medicine. Now that we face the need of bringing the doctor into the best possible relationship to a future that is yet undetermined but is sure to need the skill of a large number of trained men, we should do as we do in preventive medicine and think of the future and not burn out our material because of some preconception or red tape or false idea of what democracy means. Democracy does not mean that we are equal or alike in capacities or interests. It means only that we should be equal in opportunity and in freedom. We must not confuse political equality with equal capacity to do the things that a diversified civilization requires. Democracy can succeed only if it trains those who are to be leaders and accepts their guidance.

We who represent medical schools and medical institutions should take the active responsibility of seeing that medical institutions are not hampered or destroyed or even materially handicapped. We must see that they are kept at their task of preparing as large a number of well trained men and women in the field of medicine as physical and clinical facilities permit.

HUMAN EXPERIMENTAL SCURVY

AND THE RELATION OF VITAMIN C DEFICIENCY TO POSTOPERATIVE PNEUMONIA AND TO WOUND HEALING

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Since Lanman and Ingalls [1] demonstrated that vitamin C deficiency led to poor healing of experimental surgical wounds in guinea pigs and after operations on children there has been an increasing recognition by other surgeons (Wolfer [2] and Holman [3]) as well as by Lanman that this factor may be of importance in surgical operations on adults. Since vitamin C was isolated by Svirbely and Szent-Györgyi [4] and synthesized by Reichstein and his co-workers [5] there have been many tests for vitamin C developed for the determination of its content in foods, tissues, urine and blood. It is now realized that certain of the older methods of analysis did not give accurate results, but it is hoped that present methods will be of value within certain rather broad limits.

At the time this study was begun two and one-half years ago little was known concerning the vitamin C status of surgical patients, although Ingalls and Warren [6] indicated that most patients under medical treatment for gastric and duodenal ulcer had very low levels of the vitamin in the blood plasma. The present study has been focused particularly on the determination of the presence and degree of, or the absence of, vitamin C deficiency among patients of all types coming into surgical wards, and on determining any differences in any aspects of the surgical convalescence of patients according to the deficiency found. It was early found that complementary studies on normal persons were necessary in order to interpret the conditions found in patients.

A paper has been published by one of us [7] showing that the reduced vitamin C level in the plasma drops markedly immediately after operation but that the patients who show this drop have no clinical signs of scurvy even if the plasma level reaches zero. Several normal persons were put on a diet totally deficient

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Dr. Allan Butler and Miss Margaret Cushman performed whole blood and white cell platelet determinations and gave technical advice; Dr. Frederic Parker Jr. and Dr. Kenneth Mallory reviewed the biopsy specimens.

From the Department of Surgery, Harvard Medical School, and the Fifth Surgical Service and the Surgical Research Laboratory, Boston City Hospital. This work was aided by grants from the Wellington Fund of the Harvard Medical School and from several anonymous donors. Assistance in securing the data was furnished by the personnel of the Works Progress Administration (projects 14667, 17580 and 21302).

1. Lanman, T. H., and Ingalls, T. H.: Vitamin C Deficiency and Wound Healing: Experimental and Clinical Study, Ann. Surg. **108**: 616-625 (April) 1937.

2. Wolfer, J. A., and Hoelzel, F. C.: Significance of Cevitamic (Ascorbic) Acid Deficiency in Surgical Patients, Surg., Gynec. & Obst. **69**: 745-755 (Dec.) 1939.

3. Holman, Emile: Vitamin and Protein Factors in Preoperative Care of the Surgical Patient, Surg., Gynec. & Obst. **70**: 261-269 (Feb.) 1940.

4. Svirbely, Joseph L., and Szent-Györgyi, Albert: Hexuronic Acid as the Antiscorbutic Factor, Nature, London **129**: 576 (April 9) 1932; Biochem. J. **26**: 865-870, 1932.

5. Reichstein, T.; Grussner, A., and Oppenauer, R.: Synthesis of d- and l- Ascorbic Acid, Helvet. chim. acta **16**: 1019, 1933.

6. Ingalls, T. H., and Warren, H. A.: Asymptomatic Scurvy: Its Relation to Wound Healing and Its Incidence in Patietns with Peptic Ulcer, New England J. Med. **217**: 443-446 (Sept. 9) 1937.

7. Lund, C. C.: The Effect of Surgical Operations on the Level of Cevitamic Acid in the Blood Plasma, New England J. Med. **221**: 123-127 (July 27) 1939.

in vitamin C for periods extending up to three weeks. In all these persons the drop was rapid and reached very low levels.

It was known as a result of Emmerie and van Eekelen's [8] work that a normal person with a maximum storage of vitamin C would not get scurvy as a result of a diet totally deficient in the vitamin in eighty-four days, but they believed that the person studied was close to having scurvy at the end of the experiment.[9] Van Eekelen followed the urinary output and whole blood level of ascorbic acid during this dietary experiment and found that the urinary output dropped to low levels as soon as the patient started the diet but that the level in the blood fell gradually in a straight line from 1.8 mg. to 0.2 mg. per hundred cubic centimeters at the end of the experiment. Van Eekelen used a method for determination of the vitamin in the whole blood that is difficult, and we have been unable to use it in spite of three months' constant effort in the laboratory.

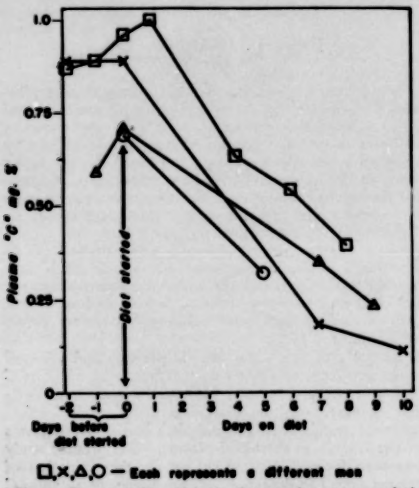

Fig. 1.—Plasma ascorbic acid levels of 4 normal men on a scorbutic diet.

The work reported here was done by Pijoan and Klemperer's [10] method at the start and later by Mindlin and Butler's [11] macromethod. The difference in the two methods lies essentially in the use of cyanide in the former. Cushman and Butler [12] have shown that cyanide does no harm (if a proper cyanide is used) but also that it does no good. Most of our determinations were made on blood plasma, except a few determinations of the white cells in our most recent work.

Last fall the work had progressed to the point at which it seemed to be important to carry out further experiments on the development of human scurvy in the normal person. For this purpose one of us (J. H. C.) went on a scurvy-producing diet on Oct. 19, 1939 and remained on it until May 7, 1940. The diet was supplemented with adequate but not excessive doses of vitamins A, D, E and B complex. A report of this experiment has been published.[13] Three months after the diet was started a 2½ inch (6 cm.) experimental wound was made down through the deep fascia of the lumbar region and a specimen was secured for biopsy in eleven days. No defect in wound healing could be demonstrated on pathologic examination.

Shortly after five months the first sign of scurvy developed (in this instance petechial hemorrhages around the hair follicles of the legs). But three weeks before this hyperkeratotic papules had developed on the buttocks. These contained ingrowing hairs and simulated the lesions associated with vitamin A deficiency. Although there was slight lassitude and ease of fatigue in the fourth and fifth months, marked fatigability began only in the sixth month. No ecchymoses occurred and no changes of the gums.

At exactly six months a second incision was made in the corresponding position in the other side of the back. It was found almost impossible to suture the transversely divided sacrospinalis fascia because the sutures stripped out between the longitudinal fibers, a difficulty which had not presented itself three months earlier. Finally four silk sutures were applied and tied on each side and then brought together and tied in the way tendon sutures are made. There was no difficulty with the latissimus fascia which had been longitudinally

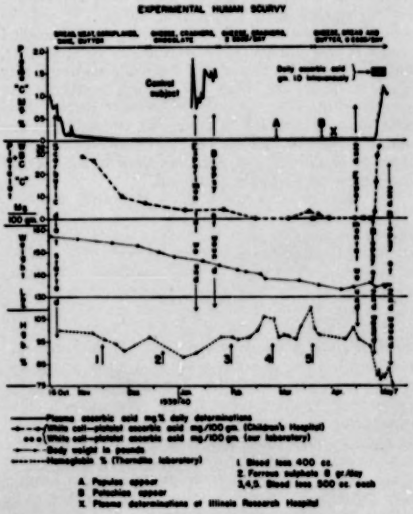
EXPERIMENTAL HUMAN SCURVY
Control subject
Daily ascorbic acid gm. 10 intravenously
A
B
X
Plasma ascorbic acid mg.% daily determinations
White cell—platelet ascorbic acid mg/100 gm. (Children's Hospital)
White cell—platelet ascorbic acid mg/100 gm. (our laboratory)
Body weight in pounds
Hemoglobin % (Thorndike laboratory)
1 Blood loss 400 cc.
2 Ferrous sulphate 0 gr./day
3,4,5 Blood loss 500 cc. each
A Papules appear
B Petechiae appear
X Plasma determinations at Illinois Research Hospital

Fig. 2.—Blood chemistry and diet in human experimental scurvy.

8. Emmerie, Adrianus, and van Eekelen, Marie: The Chemical Determination of Vitamin C with Removal of Interfering Reducing and Coloured Substances, Biochem. J. 28: 1153-1154, 1934.

9. Heinemann, M.: Personal communication to the authors.

10. Pijoan, M., and Klemperer, F.: Determination of Blood Ascorbic Acid, J. Clin. Investigation 16: 443-445 (May) 1937.

11. Mindlin, R. L., and Butler, Allan M.: Determination of the Ascorbic Acid in Plasma: A Macromethod and Micromethod, J. Biol. Chem. 122: 673-686 (Feb.) 1938.

12. Cushman, Margaret, and Butler, Allan M.: Use of Cyanide in the Determination of Ascorbic Acid, Proc. Soc. Exper. Biol. & Med. 39: 534-539 (Dec.) 1938.

13. Crandon, J. H.; Lund, C. C., and Dill, D. B.: Human Experimental Scurvy, New England J. Med. 223: 353-369, 1940.

divided. This was brought together with a continuous suture. The skin was brought together with interrupted silk sutures.

This wound seemed to heal by first intention. The cutaneous sutures were removed on the sixth day and

Fig. 3.—Normal healing at three months. Wound eleven days old.

adhesive strips applied to protect the skin from tension. On the tenth day the wound was reopened for biopsy. It was found that the area was slightly swollen, but not inflamed and not fluctuant. A careful incision was made with every effort to put as little pulling strain on the wound as possible. As soon as the skin was divided it was found that the tissues under the skin had not healed at all and that the wound contained a firm dry blood clot. A section of skin including subcutaneous fat was removed for examination and showed no healing at all.

The blood clot was then scooped out, and pieces of the fascia which had pulled apart entirely were also removed. The latissimus fascia was then sutured and the skin sutured. That afternoon the subject was given 1 Gm. of ascorbic acid intravenously, and this was repeated daily for the next ten days while the subject remained on the same scorbutic diet. The wound healed promptly this time. At the end of the second ten days another incision was made directly across the area of the wound that had been pulled apart during the previous operation. This section, shown in figure 6, demonstrates normal healing.

The plasma level fell as rapidly as in the case of previous short period studies and after reaching zero at the end of forty-one days remained at this level. Determinations of the ascorbic acid in the white cell and platelet layer of centrifuged plasma were done for us by Butler and Cushman at the Children's Hospital according to their new method.[14] (They also checked our plasma determinations every two weeks.) The content of this layer, which is normally 30 to 40 mg. per hundred grams, fell much more gradually than the plasma level, reaching zero only after one hundred and twenty-two days. It was immediately after this date (the one hundred and thirty-second day) that the hyperkeratotic papules mentioned earlier in this paper first appeared, but only after twenty days more did the first characteristic petechiae appear.

Throughout the course of the experiment a gradual persistent loss of weight occurred. It is believed that this weight loss was due to inability to eat enough of the limited diet on account of its monotony (eggs, cheese, bread, butter, chocolate and coffee). There was no gain in the final ten day period on the diet while the subject was receiving ascorbic acid, but as soon as he went off the diet he gained a pound (0.5 Kg.) a day for a while.

The hemoglobin determinations were done for us by the Thorndike Memorial Laboratory by a modification of the Klett-Summerson photoelectric method. The original level was about 100 per cent of 15.6 Gm. per hundred cubic centimeters, and there was no appreciable fall for two months. Early in the third month a slight fall occurred which was rapidly reversed by adding 8 grains (0.52 Gm.) of ferrous sulfate daily to the diet. From the start a considerable burden was placed on

Fig. 4.—No healing at six months. Wound ten days old.

the hemopoietic system because of the steady daily loss of at least 10 cc. of blood for various determinations, and this was intensified by the four additional major

14. Butler, Allan M., and Cushman, Margaret: Distribution of Ascorbic Acid in the Blood and Its Significance, J. Clin. Investigation 19: 459-467 (May) 1940.

episodes of blood loss indicated in figure 2. At the time vitamin C was given to terminate the experiment the level was 93. During the next ten days a fall occurred to 76. But during the first five days of this period the blood loss was 150 cc. a day because of saturation experiments. The final loss was too rapid for the hemopoietic system to take care of.

From this part of the experiment it would appear that, in a six month period, vitamin C deficiency per se does not produce anemia.

As a result of this study to date it can be definitely stated that a blood plasma level of zero does not necessarily mean the presence of scurvy or even of a vitamin deficiency that is close to clinical scurvy, or that such a level indicates any necessary interference in wound healing. Confirmation of this statement is derived from

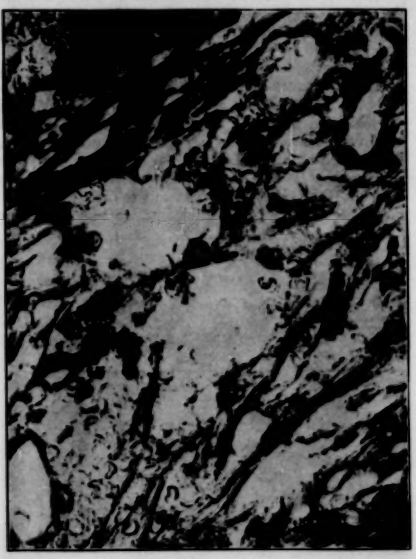

Fig. 5.—Formation of granulation tissue without intercellular substance.

Butler's work in that he showed that it is possible to cure clinical infantile scurvy by giving small doses of ascorbic acid to infants but without bringing their plasma vitamin C levels above 0.2 mg. per hundred cubic centimeters at any time.[14] On the other hand, absence of wound healing was demonstrated in six months. At just what point between three and six months delayed healing begins we cannot say.

VITAMIN C INTAKE AND PLASMA LEVELS IN RELATION TO PULMONARY COMPLICATIONS OF SURGICAL CASES

Ralli and her co-workers[15] have shown that the blood plasma level becomes adjusted rapidly to the average dietary intake of the vitamins in normal persons when there is no excessive demand for the vitamin (such as occurs in fever or other causes of increased metabolism, or in patients with diarrhea or other causes of poor absorption). The level becomes adjusted in two weeks when the diet is altered and then kept constant.

In the present study an effort has been made to secure and record histories and, if possible, day to day calculations of the dietary intake with regard to vitamin C and to correlate the results with the data derived from plasma values. Such histories can be only roughly accurate and vary greatly in accuracy according to the intelligence of the patient and the patience of the interviewer.

However, in patients not suffering from fever or other abnormal metabolism of the vitamins there is a reasonable correlation between such dietary calculations and the values actually found.

It has been claimed that vitamin C is important in the defense against infections, but no conclusive proof of this claim has been made. Since pulmonary complications are common after surgical operations of magnitude it was decided to see whether such complications were more frequent in patients with high intake and levels of vitamin C than in those with low intake and levels. In making this study as many blood specimens were taken preoperatively as possible and a careful dietary history of the intake of food during at least one month up to the time of the operation. From the dietary histories calculations were made as to the approximate number of Sherman units of vitamin C in the diet. (Two Sherman units equals 1 mg. of vitamin C.) One hundred mg. daily of the vitamin is admitted by all workers to furnish an adequate supply to the normal person.

Before making up the table to be presented the cases were individually studied and classified in all possible ways. It was found that the intake of vitamin C and its level in the plasma of the patients were on the average both much lower than saturation levels. In fact only 17 out of 109 patients in the accompanying table had an intake of sufficient vitamin C to keep them saturated. For this reason it was decided to group the patients according to diet into three classes with the first, or highest, made up of those taking 50 units, or 25 mg. or more a day. Many of these patients had a slight vitamin deficiency, but all were probably well protected against scurvy. The intermediate class is made up of the patients taking from 20 to 49 units a day, and the lowest class, those taking less than 20 units. In the same way the patients were grouped according to the level of the reduced plasma vitamin C, with the high class those with levels from 0.50 mg. per hundred cubic centimeters and over. The intermediate class had levels from 0.20 mg. to 0.49 mg. and the low class up to 0.19 mg. per hundred cubic centimeters.

Many may think that the dividing lines given here are too low, but the real difficulty is that probably most of the patients in the lowest class are still not close to clinical scurvy. The plasma determinations on the patients were multiple in more than half the instances, and good checks of multiple determinations were made except in five instances. Two determinations were done on 31 patients, three on 11, four on 7, five on 5, and seven on 2 patients.

15. Ralli, Elaine P.; Friedman, Gerald J., and Sherry, Sol: The Vitamin C Requirement of Man Estimated After Prolonged Studies of the Plasma Concentration and Daily Excretion of Vitamin C in Three Adults on Controlled Diets, J. Clin. Investigation 18:705-714 (Nov.) 1939.

The operations consisted of various common procedure done for disease of the gallbladder. Eighty-six operations were simple cholecystectomy for acute (thirteen) and chronic (seventy-three) cholecystitis with and without stones. Eleven operations were cholecystectomy with exploration of the common duct. In 5 cases the common duct alone was drained. Cholecystostomy was done four times and cholecystostomy and choledochostomy three times.

The complications consisted of atelectasis nine times and bronchopneumonia eight times. It is often difficult to distinguish between these two diagnoses. In general the less severe cases were called atelectasis. If each diagnosis is studied separately the results are no different from the results given later in this paper. Also, if the cases of cholecystectomy for chronic cholecystitis are studied separately no difference is found. Statistical analysis of the accompanying table will show that there is no significant correlation of the diet or of the blood level to the development of postoperative pneumonia or atelectasis. It is curious that all three fatalities from pneumonia occurred in patients with both a high intake and a high level. The data on these 3 patients follow: In one the diet calculated was 180 units of vitamin C daily, and three plasma determinations were done showing 0.85, 1.08 and 0.98 mg. per hundred cubic centimeters. The next patient took 26 units daily, and her plasma level was 0.65 mg. The third took 55 units daily and showed 0.50, 0.53 and 0.48 mg. in the plasma. Two of these patients were obese.

Similar studies have been made in regard to other operations but will not be presented here. As far as we have gone they show the same lack of correlation mentioned previously. Other studies have been concerned with postoperative sepsis of wounds. Again no data need be presented as they show no correlation between sepsis of wounds and vitamin C.

Of considerable interest in this connection is the fact that the subject of the dietary experiment mentioned previously had only two minor "colds," lasting two days each, and no other infections during the experiment. This minimal amount of infection is unusual for this subject, who in past winters has invariably suffered from frequent and more severe infections of the upper part of the respiratory tract.

From this one cannot conclude that vitamin C is not necessary once infection has started and particularly in patients with serious long-continued sepsis when the reserves may be depleted more rapidly than is the case when lack of the vitamin in the diet is the only factor.

WOUND HEALING

The relation of wound healing to vitamin C in surgical patients is, of course, one of the most important studies that can be made. Our data on the following cases show certain aspects of this problem. It is recognized that wound healing is the result of many factors and that of primary importance is good surgical approximation with sutures that do not cut out and are not removed before the wound has reached enough tensile strength to hold together. Also the factor of decreased plasma protein is recognized but has not been studied in these cases.

REPORT OF CASES

CASE 1.—*History.*—L. L., a man aged 59, a fish handler, had carcinoma of the stomach. His diet had been inadequate for months. There had been preoperative loss of 50 pounds (22.7 Kg.). Anterior gastroenterostomy was done, including closure with no. 2 catgut. No note was made as to whether fascia sutures were interrupted or continuous or as to the number of stay sutures.

Disruption occurred on the tenth day, within two hours of removal of the stay sutures, but there was no infection in the wound. The wound was resutured under local anesthesia.

Vitamin Study.—Two days after resuture, the blood plasma level of reduced ascorbic acid was 0.00. Ascorbic acid, 600 mg., was given daily intravenously for three days. After three days of such treatment the level was still 0.00. Then 300 mg. a day was given by mouth for seventeen days, at the end of which time the level was found to be 0.54 mg. per hundred cubic centimeters.

Since the vitamin level failed to rise from zero after 1.8 Gm. had been given in three days the deficiency

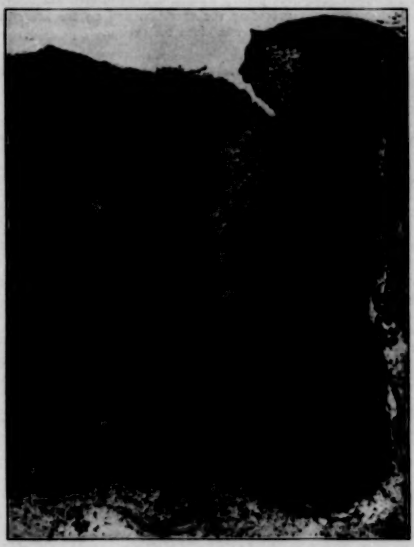

Fig. 6.—Normal healing at six months and ten days. Wound ten days old.

was severe and probably was the main cause of the disruption. However, the surgical technic was also open to question.

CASE 2.—*History.*—A. A., an unemployed man aged 65, had acute intestinal obstruction from a band. His diet had been excellent up to four days before operation, which was performed for separation of adhesions. The closure was not specified, except that it was in layers. Sutures were removed on the ninth day.

Separation of the wound occurred up to the peritoneum on the tenth postoperative day without infection in the wound, which was packed and strapped.

Vitamin Study.—The next day the blood plasma ascorbic acid level was zero.

In treatment 300 mg. daily of ascorbic acid was given by mouth from the tenth to the twenty-second postoperative day. The blood plasma level of ascorbic acid on the twelfth day was zero, on the nineteenth day 0.53 and on the twenty-third day 0.81.

In spite of the zero plasma level at the time of separation of skin and fascia it is believed that the fault in this case was surgical. It is not believed possible that a deficiency which could interfere with healing could occur in such a short time. In addition, seven daily doses of 300 mg. would not bring the plasma vitamin C content of a scorbutic patient up to the level of 0.53.

CASE 3.—*History.*—R. F., a man aged 38, a shipper, had an abscess of the appendix. His diet had been adequate up to his present illness, which had lasted ten days, with pain and vomiting, before admission and five days after admission. At operation drainage of the abscess without appendectomy was through a right rectus incision. Closure was done in layers with no. 2 chromic catgut. Disruption occurred thirty-three days postoperatively.

Vitamin Study.—A plasma vitamin C level of zero was found on the two days preceding the operation and on the fifteenth day after it. No vitamin was given the patient.

Relation of Vitamin C Intake and Plasma Level of Reduced Ascorbic Acid to Pulmonary Complications in Patients Having Biliary Operations: Diet = Sherman Units *

Plasma, Mg. per 100 Cc.	50 and Over	20-49	0-19	Total
0.50 and over	5* / 29	0 / 10	0 / 0	5* / 39
0.20-0.49	2 / 17	3 / 15	0 / 3	5 / 35
0.0-0.19	2 / 7	1 / 11	4 / 17	7 / 35
Total	9* / 63	4 / 36	4 / 20	17* / 109

* The figures are in the form of fractions. The numerator indicates the number of patients with pulmonary complications in each category and the denominator the number of patients among whom these complications arose. Two deaths occurred in the series not indicated on the chart. One occurred two months after operation for prostatic obstruction and the other from pulmonary embolism proved at autopsy. The asterisk indicates that 3 patients died of pneumonia.

The convalescence was stormy. Fever was present during the whole time from admission to disruption, and the intake of vitamin C was negligible. Vomiting occurred, and Wangensteen drainage was used a good part of the time for three weeks after the operation was performed.

Although presumably the patient had no important deficiency on admission (on the basis of dietary history) one cannot assume that the poor healing in this case was due to surgical factors or sepsis alone, as one has no information on the length of time it takes for scurvy to develop under these conditions.

CASE 4.—*History.*—M. A., an unemployed man aged 55, had an obstructing duodenal ulcer and tertiary syphilis. His diet had been inadequate and he had lost 50 pounds (22.7 Kg.). There had been use of large amounts of alcohol. There was complete retention of barium for six hours. As preoperative treatment, gastric drainage and hydration were done. A transverse incision was made and posterior gastroenterostomy was performed. The peritoneum was closed with continuous no. 0 chromic catgut and the fascia with interrupted no. 0 chromic catgut. Silk stays were tied over gauze. Sutures were removed on the sixth day and disruption occurred five hours later.

Vitamin Study.—One month after disruption the blood plasma level of vitamin C was zero on two different days. Ascorbic acid tablets were not given but the diet had contained 175 units daily after the fifth postoperative day. Secondary sutures were removed on the twenty-second day after resuture.

In this case the disruption is believed to have been due in part to vitamin deficiency. We were informed that ascorbic acid had been given in adequate doses. After disruption it was found that this had been given by mouth, and probably none of it had been absorbed before the first operation.

In a case such as this, in which there is complete pyloric obstruction, the administration must be by the intravenous route. However, the removal of stay sutures on the sixth day is not good technic.

COMMENT

The observations made in the three sections of this report indicate that a careful study of the vitamin C status of surgical patients is valuable. Plasma determinations alone, if low, are not sufficient evidence on which to base treatment as the great bulk of patients with such levels are in no known danger from the deficiency. However, a history of months or years of inadequate intake, such as is seen so frequently in patients who have, or who think they have, gastric or duodenal ulcers, is ample evidence on which to base active treatment. Patients with diarrhea have not been presented in this paper, but such patients and patients with chronic sepsis probably need a higher intake of the vitamin to protect them from scurvy than those without these conditions. Therefore both fever and diarrhea must be considered in estimating the probable reserves of vitamin C in the patient's tissues. No evidence is presented here, but there is ample evidence elsewhere that most patients with scurvy are also suffering from multiple deficiencies. If treatment is indicated at all it is probably wise to give large doses of other vitamins when large doses of vitamin C are given. Of these it is our belief at present that thiamine hydrochloride and nicotinic acid are the most important ones for surgical patients. We now believe that such patients as 1 and 4 should be given ascorbic acid 1 Gm., thiamine hydrochloride 30 mg. and nicotinic acid 100 mg. daily for four days before operation.

CONCLUSIONS

1. A vitamin C free diet produced scurvy in one of us at the end of five months, and certain symptoms of it were severe at six months.

2. The ascorbic acid level of the blood plasma fell to zero in forty-two days and of the white blood cells in one hundred and twenty-two days.

3. A wound healed well after the subject had been three months on a scorbutic diet but not after six months.

4. There is no correlation between vitamin C intake and plasma levels and the incidence of postoperative atelectasis and pneumonia.

5. Vitamin C deficiency may be a factor in failure of some human wounds to heal.

6. A dietary history should be taken on all patients who come to major surgery and, if a long-continued marked deficiency of the intake of vitamin C is found, the patient should be given daily from 1 to 4 Gm. of ascorbic acid.

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PLASMA VITAMIN C AND SERUM PROTEIN LEVELS IN WOUND DISRUPTION

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DETROIT

The problem of disruption and evisceration of abdominal wounds still remains unsolved, and the comparative importance of the various factors concerned with the production of this condition still remains in dispute. In a recent review of the literature, two of us [1] analyzed 1,458 collected cases, including 33 cases occurring in the surgical service of the City of Detroit Receiving Hospital. As a result of this study, we came to the following conclusions: The incidence of this catastrophe is probably about 1.5 per cent, with a mortality of about 35 per cent. The age, sex and race are unimportant factors. Seasonal variations may have some bearing as far as they predispose to respiratory infections. The period when disruption is most likely to occur is from the fifth to the tenth postoperative day, the eighth day being the average.

Logically the causes for failure of a wound to heal normally lie in the conditions affecting and retarding wound healing. Locally, one must consider incisions placed without regard to injury of the nerve and blood supply, as well as the severance of the transversus abdominis muscle, frequently making for a weak closure of the deep layer of the abdominal wall. Faulty technic resulting in traumatization of tissue and poor hemostasis, injudicious choice of and method of using suture material and the presence of infection are considered to predispose to wound disruption. In addition, those conditions tending to increase intra-abdominal tension, such as undue coughing, vomiting and intestinal distention, are thought to be of importance. They not only make for increased strain on the suture line but also interfere with immobilization of the part. In addition to the local factors pertaining to the wound itself, there are certain general factors which undoubtedly exert an influence on wound healing. The underlying disease or the presence of concurrent systemic disease resulting in a poor general condition of the patient must not be overlooked. Any condition of the patient resulting in a nutritional deficiency sufficient to produce low levels of ascorbic acid in the plasma and of protein in the serum of the blood must be considered important. There is also the possibility of an allergic response to catgut.

At the completion of this review, we felt more in doubt than ever regarding the relative importance of the various factors contributing to disruption of the abdominal wound. In reviewing the work of other writers and in summarizing our own case records, we were impressed that we were attempting to draw conclusions from inaccurate and incomplete data. Too frequently it has been necessary to study records which lack sufficient information to afford a basis for forming satisfactory conclusions. The basic problem is one of wound healing, and it is difficult to evaluate its components even when a direct attempt is made in an individual case. If a study of a series of cases of wound disruption is to be of real value, it would seem logical to attempt analysis of each case as it occurs, with special emphasis on the contribution played by each of the many possible factors involved. Consequently we began to collect a new series of instances of disruption and to obtain data from a study of the patient rather than of the record.

It would seem logical to consider the distended, delirious patient, thrashing about in bed, coughing and vomiting, with a large infected abdominal incision, a candidate for wound disruption; yet his wound usually heals without separation. Consequently, when disruption of the wound does occur, the cause seems all too obvious. Pneumonia, diabetes and other serious concurrent systemic disease may predispose to disruption, but most patients suffering from these conditions have normal healing. On the other hand, consider the patient who has been afebrile for from three to five days, eating and drinking, urinating and defecating normally, without cough or nausea, whose incision appears to have healed and then, for no apparent reason, opens wide. This wound may appear clean, as though freshly incised, with no evidence that there has been any tendency to heal. In an attempt to find some cause, one is prone to ascribe this catastrophe to some definite inability on the part of the patient's tissues to heal. Possibly these factors are present also in the wound which disrupts in the presence of infection and with a stormy postoperative convalescence.

Recently there has been much interest about hypoproteinemia and vitamin C deficiency in relation to wound healing. The effect of low serum protein on wound healing has been studied by Carrel,[2] by Harvey [3] and more recently by Thompson, Ravdin and Frank,[4] who thus summarize the work on this phase of the subject:

> Clark [5] showed that on a diet high in protein there was no quiescent period in the repair of the wound in his dogs, the contraction beginning at once. In the review of Arey [6] on "Wound Disruption," one is struck with the fact that many of the factors associated with repair are directly or indirectly dependent on a diet high in protein. Thus, animals fed on a diet of this type showed accelerated fibroblastic proliferation. Cellular activity on the whole greatly increased. The quantity of secretion from the wound was decreased. A diet high in carbohydrate, to which alkalis had been added, increased the quantity of this secretion. The wounds of animals on an alkaline diet are said to be more easily infected.
>
> Thus there are a number of factors, both in the dog and in the patient who is subjected to a prolonged and serious protein deficiency, which favors disruption of the wound. It has been observed that, when cultures of growing cells are surrounded by an overabundance of fluid of low viscosity, cell motility is retarded. Our experiments would tend to support the theory that certain of the amino acids are essential for the stimulating of tissue growth.

These authors found, in a high percentage of dogs with well advanced hypoproteinemia, that evisceration or breakdown of the wound will occur after laparotomy.

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Thompson, Ravdin, Rhoads and Frank [7] found further that catgut loses its tensile strength more rapidly in tissues in the presence of hypoproteinemia and also that they could restore serum protein to normal in hypoproteinemic dogs by means of intravenous injections of lyophile plasma, and in these animals the wound healed normally. Whipple and Elliott [8] and Stone [9] also believe that hypoproteinemia is a factor in the production of wound disruption.

Experimental data have shown that vitamin C deficiency plays an important role in wound healing in the laboratory animal. Aschoff and Koch [10] in 1919 stated that in cases of scurvy the main primary deficiency was a lack of intracellular cement substance. Hojer [11] in 1924 verified these observations in the scorbutic guinea pig and noted changes which were due to a lack of collagen. Wolbach and Howes [12] demonstrated that the histologic basis for the failure of wounds to heal in the presence of vitamin C deficiency lies in the inability of the supporting tissues to produce and maintain intracellular substance, and later Menkin, Wolbach and Menkin [13] found that microscopic sections of tissues of

TABLE 1.—*General Condition in Twenty Cases of Wound Disruption*

General Condition	Underlying Disease
Good	2 gunshot wounds of the abdomen
9 cases	1 ruptured peptic ulcer
	1 duodenal ulcer with obstruction
	1 acute appendicitis
	1 chronic infection of gallbladder with stones
	1 fibroid uterus
	1 ventral hernia
	1 chronic appendicitis
Fair	1 volvulus of sigmoid flexure
8 cases	1 perforated carcinoma of stomach (resected)
	1 carcinoma of stomach (inoperable)
	1 intestinal obstruction from adhesions
	1 chronic appendicitis with jejunal adhesions
	1 acute appendicitis with perforation
	1 chronic infection of gallbladder with stones
	1 simple exploration
Poor	1 acute appendicitis with perforation and liver abscess
3 cases	1 carcinoma of the pancreas with jaundice
	1 carcinoma of the stomach (inoperable)

scorbutic animals demonstrated the deposition of increasing amounts of intracellular cement substance depending on the amount of vitamin C administered. Taffel and Harvey [14] report that the tensile strength in stomach wounds of the partially scorbutic guinea pig is much decreased from the eighth to the tenth day. Lanman and Ingalls [15] have shown that guinea pigs maintained on approximately one fifth of the minimal preventive dose of ascorbic acid exhibited healing of operative wounds inferior to those of normal controls. Jeney and Törö [16] were able to demonstrate in "in vitro" cultures of fibroblasts a sudden increase in collagen fibrils when ascorbic acid was added to the medium. Wolbach [17] states that deficiencies of vitamin C result in abnormalities of all intracellular substances having collagen as their basis and that its absence prevents the formation of the matrices of white fibrous tissue, bone, cartilage and dentin. He states further that in vitamin C deficiency the pathologic picture is produced by resorption of intracellular materials in both growth and reparative reactions. In such instances, if vitamin C is supplied either in natural foods or as the pure compound, histologic repair is immediately resumed.

There are many clinical observations which are in general agreement with the experimental data. Sokolov [18] in 1932 recommended a diet rich in vitamin C and stated that it was his opinion that a partial vitamin C deficiency was a definite factor in poor wound healing. Archer and Graham [19] believe that many patients with gastric disease are in a subscurvy state owing to long periods of ill health and a restricted diet. They have observed that wounds of these patients heal badly. This is in general agreement with observations made by Hess,[20] Lazarus [21] and McNealy and his associates.[22] Youmans [23] believes that, although frank scurvy is rare, in contrast, mild or latent scurvy or a slight deficiency in vitamin C is probably very common. Ingalls and Warren [24] report 20 cases of peptic ulcer in all of which there were low vitamin C values. They believe that there is an important relationship between low vitamin C values and the inability of an ulcer to heal and its tendency to bleed. Therefore they urge a check of the vitamin C before surgery is resorted to in such cases. Lanman [25] says that asymptomatic scurvy is far more common in infants and children than is realized and presents evidence to show that a partial vitamin C deficiency is of importance in the failure of surgical wounds to heal in human beings.

Madison and Manwaring [26] have shown that there is experimental evidence which would indicate that vitamin C aids the body in defense against infectious diseases and that large doses increase antibody production. This is borne out by the work of Smith and McConkey.[27] Lund,[28] Wolfer and Hoebel [29] and Bartlett, Jones and Ryan [30] have recently shown that there is a decrease in the concentration of the plasma ascorbic acid following surgical operations. We also have found this to be true. With regard to the 14 cases reported by Bartlett, Jones and Ryan,[30] all but 1 presented gastric

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or duodenal ulcer or a malignant growth of the gastrointestinal tract, while 1 was a very toxic case of exophthalmic goiter. We have found that these types of cases show low values as a routine. We have found also that an excess of 1,000 mg. of vitamin C intravenously is required for saturation in these cases for a twenty-four hour period. Consequently, in view of the fact that all presented low levels of vitamin C in the plasma on initial examination, and in all but one a single dose of 1,000 mg. was given from one day to fourteen days preoperatively, it is our belief that all these cases undoubtedly, if tests had been made one hour before these operations, would have shown very low values. In those cases in which vitamin C determinations were made on the day of operation, the values were low. We have found that the average postoperative drop in eleven controls with normal preoperative values was about 0.05 mg. per hundred cubic centimeters of blood plasma. Lund [28] states that in cases in which the preoperative value is low, the postoperative decrease is proportionately greater. He believes that this postoperative drop may be explained by the decreased intake and also by an increased metabolism resulting from the usual postoperative fever. He also believes that the demand of the newly formed tissues which are produced in the healing process may use the vitamins at a rate faster than that for normal tissue growth. Wolfer and Hoebel [29] stress the large dosage required to bring a patient in a depleted state to, and maintain him at, a state of saturation. Vorhaus [31] stresses the importance of excessive vitamin therapy, both before and after operation.

TABLE 2.—*Type of Incision in Twenty Cases of Wound Disruption*

17 vertical incisions	12 clean	Evisceration occurred in 11 Evisceration did not occur in 1 (peritoneum not opened)
	5 infected	Evisceration occurred in 2 Evisceration did not occur in 3
3 transverse incisions	2 clean	Evisceration did not occur
	1 infected	Evisceration did not occur

The concept of vitamin C deficiency with regard to difficulties in wound healing is not new, descriptions of scurvy having appeared in the literature since the time of Hippocrates. Richard Walter's [32] account of Lord Anson's "Voyage Around the World" in 1740 vividly describes the effects of scurvy among the crew: "Scars of wounds that had been for many years healed, were forced open . . . one of the invalids . . . who had been wounded fifty years before . . . and had continued well for a great number of years past, yet, on his being attacked by the scurvy, his wounds in the progress of the disease broke out afresh and appeared as though they had never been healed."

During the year 1939, with the help of colleagues from the staffs of Harper and Grace hospitals, we collected twenty cases of disruption of the abdominal wound at the time it occurred. In each instance the patient was either seen by us or the case was discussed at length with the attending surgeon or the surgical resident in charge, and in each instance samples of blood were obtained for the determination of plasma ascorbic acid and serum protein. All the analyses were performed as quickly as possible, the time elapsed not exceeding two hours in any instance. The plasma concentration was determined by the method of Mindlin and Butler [33] and the serum protein concentration by calculation from the total nitrogen obtained by micro Kjeldahl analyses.[34]

TABLE 3.—*Type of Suture Material Used in Closure—All Twenty Cases Closed in Layers*

No. of Cases	Suture Material
2	Fine silk 1 without tension sutures 1 with stainless steel wire tension sutures
4	# 000 chromic catgut 2 without tension sutures 1 with stainless steel wire tension sutures 1 with 16 stainless steel wire tension sutures
2	# 0 catgut and waxed silk tension sutures
12	# 1 and # 2 plain and chromic catgut in various combinations 6 without tension sutures 6 with tension sutures—2 silk, 2 wire, 2 silkworm gut In the 13 cases in which evisceration occurred: Tension sutures were used in 7 Tension sutures were not used in 6 In the 7 cases in which evisceration did not occur: Tension sutures were used in 4 Tension sutures were not used in 3

Table 1 groups the 20 cases of wound disruption into three classes, indicating whether the condition was considered good, fair or poor at the time of the primary operation.

Surprisingly enough, the condition in all but three of these cases was thought to be good or fair at the time the case was seen by the surgeon. Malignancy has been emphasized by many as a condition predisposing to disruption. In our review of 1,458 cases 320, or 22 per cent, presented malignant growths. It will be noted that carcinoma was the underlying disease in 20 per cent of this series. In the course of checking the plasma vitamin C and serum protein levels of the blood in some 200 surgical cases, we have found that those

TABLE 4.—*Nine Clean Cases with Uneventful Convalescence Prior to Disruption*

Disease	General Condition	Plasma Ascorbic Acid, Mg. per 100 Cc.	Serum Protein, Gm. per 100 Cc.	Albumin-Globulin Ratio	Results
Volvulus of sigmoid flexure	Fair	0.13	5.63	1.1	Evisceration
Carcinoma of the stomach	Fair	0.51	5.95	1.2	Evisceration
Chronic appendicitis	Good	0.21	6.22	1.2	Evisceration
Perforated carcinoma of stomach	Fair	0.25	5.92	1.3	No evisceration
Chronic appendicitis and jejunal adhesions	Fair	0.38	5.59	1.3	Evisceration
Cholecystitis and cholelithiasis	Fair*	0.41	5.85	1.2	Evisceration
Carcinoma of the stomach	Poor	0.39	5.44	1.2	Evisceration; died at home
Carcinoma of pancreas	Poor†	0.66	5.70	1.2	No evisceration
Ventral hernia	Good	0.49	5.71	1.2	No evisceration

* Five hundred milligrams of vitamin C given preoperatively.
† Large hematoma in wound.

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presenting malignant growths of the gastrointestinal tract, as well as those presenting gastric or duodenal ulcers, show almost universally low values.

Table 2 shows that, as far as this series is concerned, disruption occurs more frequently following vertical incisions.

TABLE 5.—*Five Clean Cases in Which Postoperative Complications Occurred*

Disease	General Condition	Postoperative Course	Plasma Ascorbic Acid, Mg. per 100 Cc.	Serum Protein, Gm. per 100 Cc.	Albumin-Globulin Ratio	Results
Duodenal ulcer with obstruction	Good	Distention, vomiting, 3 transfusions	0.42	6.30	1.4	Evisceration, died
Suspected carcinoma of stomach unconfirmed	Fair	Persistent cough	0.35	5.60	1.4	Evisceration, died
Cholecystitis and cholelithiasis	Good	Vomiting, cough, hiccup	0.30	5.80	...	Evisceration
Acute appendicitis	Good	Distention, cough	0.30	5.56	1.2	Evisceration
Gunshot wound of abdomen	Good	Distention, atelectasis, pneumonia, sulfanilamide, sulfapyridine	0.31	5.90	1.3	Evisceration

It may be argued that this is to be expected, as the vertical incision is the more commonly used. However, it will be seen that the only cases in which evisceration occurred following disruption were those in which the vertical incision was used. As might be expected in the presence of infection and the formation of adhesions, evisceration is less frequent. As a matter of fact, the only case of a clean vertical incision in which evisceration did not occur was one in which the peritoneum was not opened. No evisceration has yet occurred through the disrupted wound in a transverse incision. We have used this incision many times in the past three years, and especially is it to be recommended in the upper part of the abdomen, for here most vertical incisions not only impair the nerve and blood supply but also sever the tendinous fibers of the transversus abdominis muscle, which fuses with the peritoneum in the midline.[35] This makes for a weak closure of the deep layer. If these fibers are split transversely they are easily approximated in a firm closure.

Table 3 illustrates that, as far as this small series is concerned, the type of suture material seems to make but little difference with reference to wound disruption.

That no type of suture material is proof against disruption is in agreement with observations made in our review; this was also emphasized by Madelung[36] in his classic work in 1905. We came to the conclusion that tension sutures were of questionable value but that they might tend to prevent evisceration should disruption occur. These data likewise indicate that tension sutures are not positive protection against wound disruption or evisceration, since tension sutures were employed in seven of the thirteen cases in which evisceration occurred.

Tables 4, 5 and 6 deal with the plasma vitamin C and serum protein levels in the 20 cases of wound disruption. It will be noted that the serum protein was below normal in every instance in which wound disruption occurred and that, with a single exception, this was likewise true of the plasma ascorbic acid.

Table 4 comprises a group of 9 cases in which the wound appeared perfectly clean and in which the convalescence prior to disruption had been absolutely uneventful. In each instance the disruption occurred without warning; the patient had had a normal postoperative course and had been afebrile for three or more days, and there had been no vomiting or distention. In all except 1, the disruption was without apparent physical cause, and the plasma vitamin C and serum protein values of the blood plasma were low. This case, which was one of carcinoma of the pancreas with obstructive jaundice, deserves special comment:

A man aged 73 appeared to be in very poor condition. Preoperatively the plasma vitamin C value of the blood was 0.37 mg. and the serum protein value 5.36 Gm. per hundred cubic centimeters. In the course of a series of saturation studies we have found that from 1,000 to 2,000 mg. of ascorbic acid over a period of from three to four days was sufficient to elevate the blood ascorbic acid to normal levels. Consequently, we gave the patient vitamin C in amounts which were found to produce saturation in the average of the cases studied. A transfusion was also given. In addition, dried bile and vitamin K were administered until the prothrombin time was within normal limits. A subcostal incision was made and an enormously distended gallbladder was found and a cholecystoduodenostomy was performed. The convalescence was surprisingly smooth and uneventful. On the fifth day the wound separated down to the deep layer. The transversus abdominis fascia and peritoneum were well healed and did not separate. The patient was taken to the operating room, where a careful inspection of the wound revealed a large, partially organized hematoma, approximately 5 by 5 by 3 cm., which had actually forced the anterior fascia and skin apart. The wound was clean and there was good evidence of healing. A secondary closure was performed, followed by an uneventful recovery. It will be noted that, although the serum protein was low, the vitamin C concentration was practically normal. We consider that separation of this wound was due primarily to the formation and pressure of the hematoma. It is quite likely that in this case the wound would have separated even though the serum protein had been normal.

TABLE 6.—*Six Infected Cases with Postoperative Complications*

Disease	General Condition	Postoperative Course	Plasma Ascorbic Acid, Mg. per 100 Cc.	Serum Protein, Gm. per 100 Cc.	Albumin-Globulin Ratio	Results
Gunshot wound of abdomen	Good	Stormy; transfusion	0.34	6.10	...	Evisceration
Myoma uteri and chronic salpingitis	Good	Moderate distention	0.28	6.20	1.3	No evisceration
Intestinal obstruction and adhesions	Fair*	Cough	0.42	6.30	1.4	No evisceration
Acute appendicitis with perforation and peritonitis	Fair	Cough; septic temperature; distention	0.58	5.60	1.3	No evisceration
Acute appendicitis with perforation, pylephlebitis and liver abscess	Poor	Cough; distentions; transfusion	0.35	5.40	...	No evisceration; died
Ruptured peptic ulcer	Good	Mild wound infection	0.35	5.56	1.2	Evisceration

* Wound disrupted following a previous operation many years before.

Table 5 groups five clean cases in which postoperative complications, in addition to the complication found in the wound, occurred. In each of these cases there was the complicating factor of an increase

35. Batson, Oscar B.: Anatomy of Gallbladder Incisions, Surgery **9**: 871-874 (June) 1938.

36. Madelung, Otto: Ueber der postoperativen Vorsal von Baucheingeweiden, Arch. f. klin. Chir. **77**: 347-401, 1905.

in intra-abdominal tension. One patient received three transfusions, and it will be noted that this patient had the highest serum protein value in the series. The last patient in this series, a 12 year old boy with two gunshot perforations of the stomach, developed type XVIII pneumonia. He was treated with sulfanilamide and sulfapyridine. According to the investigations of Bricker and Graham,[37] wound healing is adversely affected by the administration of sulfanilamide. In this case the use of both sulfanilamide and sulfapyridine quite probably was a factor in creating the wound disruption. In each of these cases the wound appeared clean, with no evidence of healing, and in each the serum protein and vitamin C concentrations of the blood plasma were low.

TABLE 7.—*Summary of Analyses in Twenty Cases of Wound Disruption: Average Values for Plasma Ascorbic Acid and Serum Protein Concentrations*

Group	Number of Patients	Plasma Ascorbic Acid, Mg. per 100 Cc.	Range, Mg. per 100 Cc.	Serum Protein, Gm. per 100 Cc.	Range, Gm. per 100 Cc.	Albumin-Globulin Ratio
Normal values reported in the literature	..	....	0.7 to 2.0	7.11	6.5 to 7.7	1.53
Normal values in our series (students)	20	0.96	0.64 to 1.86	7.19	6.81 to 7.46	1.55
Our group of hospitalized patients with benign conditions	30	0.87	0.49 to 1.61	6.93	5.90 to 7.75	1.50
Wound disruption (infected wounds)	6	0.38	0.28 to 0.58	5.84	5.00 to 6.20	1.30
Wound disruption (clean wounds)	14	0.36	0.13 to 0.66	5.81	5.44 to 6.20	1.35
		Standard Deviation	Test of Significance	Standard Deviation		Test of Significance
Infected wounds		0.0533	10.1	0.105		8.2
Clean wounds		0.082	9.9	0.174		7.6

Table 6 comprises 6 cases in which there was a definite wound infection. In all except the last case, there were moderate to severe stormy postoperative courses. In the last case, in which there was ruptured peptic ulcer, operation was done through a high right rectus incision. We would note here in passing that at the City of Detroit Receiving Hospital 234 operations on ruptured peptic ulcers were done through this type of vertical incision with an incidence of wound disruption and evisceration of 2.6 per cent,[38] this with a recorded hospital incidence of 0.5 per cent, which is very high (we feel that both these figures are too low, as during this period many partial disruptions without evisceration undoubtedly went unrecognized). During 1938 we operated on 39 of these patients through a short transverse incision similar to that described by Amendola [39] without a single evisceration. We not infrequently see these wounds become severely infected and break down, but owing to the location and type of this incision we do not expect serious wound separation in these cases. In checking 40 gastric and duodenal ulcer cases, in half of which on entrance to the hospital perforation existed, we found that almost universally low serum protein and plasma vitamin C values were present. The incidence of wound disruption might be expected to be high because of nutritional deficiencies.

Table 7 summarizes the 20 cases of wound disruption in this series. The normal values as collected from the literature,[40] as well as our own series, for plasma ascorbic acid are from 0.7 to 2.0 mg. of ascorbic acid per hundred cubic centimeters of blood plasma. The normal total serum protein values reported in the literature vary from 6.5 to 7.7 Gm. per hundred cubic centimeters, 7.1 being the average. Our data from normal subjects were obtained from college students and laboratory workers. It will be seen that these averages are well within the limits reported in the literature as normal. Our data, obtained from a group of 30 hospitalized patients with benign lesions (hernias, appendicitis, cholecystitis, fractures and the like), were also within normal limits but tended to be slightly lower. It will be seen that the average values of the plasma ascorbic acid and serum protein concentrations in the wound disruption cases are decidedly lower than normal.

COMMENT

There are undoubtedly many patients operated on when in a subscurvy state who have normal wound healing, but the relationship of low vitamin C and low serum protein to poor wound healing of those who have difficulty in wound healing cannot be overlooked.

In a series of 1,458 collected cases of wound disruption 320, or 22 per cent, presented carcinomas, while 195, or 13.4 per cent, presented gastric or duodenal ulcers. In such cases the nutritional condition of the patient, as reflected by serum protein and vitamin levels, is very likely to be poor because of restricted diets and, in the case of serum protein concentrations, because of decreased production of the proteolytic enzymes.

During the past year, in the course of some 200 determinations, we found that persons suffering from carcinoma of the gastrointestinal tract or gastric or duodenal ulcers almost universally show low vitamin C and serum protein values. It has been noted recently that some patients will show a drop in their vitamin C levels following certain operative procedures. We have found this to be true. We know also that in the presence of infection the body requires a greater intake of vitamin C in order to maintain a normal degree of saturation.

CONCLUSION

We would emphasize Mason's [41] statement that "the urge to heal is almost as great as the urge to live." Wound healing is affected by many factors, and the nutritional condition of a patient is a most important one. Either to maintain life or to repair tissue there must be a supply of proteins, fats, carbohydrates, minerals, water and vitamins. Periods of inanition or faulty nutrition are likely to deplete the carbohydrates and fat stores and to lower serum protein and vitamin levels. We almost universally supply carbohydrate and salts by routine intravenous administrations, but, generally speaking, if a transfusion is given it is because the hemoglobin and the red blood cell count are low

37. Bricker, E. M., and Graham, E. A.: The Inhibitory Effect of Sulfanilamide on Wound Healing, J. A. M. A. **112**: 2593-2594 (June 24) 1939.

38. Hartzell, J. B., and Sorock, M. L.: Acute Perforated Peptic Ulcer: Simple Closure Through a Short Transverse Incision, Surg., Gynec. & Obst. **69**: 669-670 (Nov.) 1939.

39. Amendola, F. H.: Simplified Approach for Suture of Acute Perforation of Peptic Ulcer, Surg., Gynec. & Obst. **64**: 76-77 (Jan.) 1937.

40. Farmer, C. J., and Abt, A. F.: Ascorbic Acid Content of Blood, Proc. Soc. Exper. Biol. & Med. **32**: 1625-1629 (June) 1935. Magnuson, A. E., and Osterberg, A. E.: Determination of Cevitamic Acid in Blood and Urine, Proc. Staff. Meet., Mayo Clin. **13**: 700-702 (Nov. 2) 1938. Mindlin and Butler.[36]

41. Mason, M. L.: Wound Healing, Internat. Abstr. Surg. **69**: 303-315, 1939; in Surg., Gynec. & Obst., October 1939.

rather than because of a low serum protein, and the vitamins are forgotten entirely. It would seem logical that, if normal healing is to be expected, the ascorbic acid and serum protein levels of the blood plasma ought to be brought to and kept at normal concentration.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LUND AND CRANDON AND DRS. HARTZELL, WINFIELD AND IRVIN

DR. THOMAS T. MACKIE, New York: These two papers are important contributions not so much because of correlation between deficiency of a particular vitamin or low plasma protein levels and certain surgical complications as because of the broader implications of nutrition in wound healing and surgical convalescence. I likewise have found that a drop of the plasma vitamin C is common in the postoperative period. There is ample experimental evidence to support the role scurvy plays in failure of wound healing. Wolbach has shown that in this condition there is defective formation of collagen. In scorbutic guinea pigs there is obvious reduction of the tensile strength of wounds when contrasted with the normal animal, beginning about the fifth postoperative day. Although single determinations do not permit the conclusion that the patient is on the verge of scurvy or that failure of healing will occur, they indicate that a greater hazard may well exist. These papers permit two conclusions. Demonstration of low plasma ascorbic acid values or low plasma protein levels indicates an abnormal state of nutrition. Evidence of one or more such deficiency must be accepted as indicating the probable presence of others. Both experimental and clinical studies indicate that these multiple deficiencies may contribute to several important postoperative complications, including wound disruption, hemorrhage, gastric atony, persistent vomiting, distention and paralytic ileus. Such observations have led me to believe that the preoperative management of elective surgical cases should include utilization of those clinical and laboratory methods which are available at present to evaluate the nutritional states of the patient. Evidence of one deficiency must be accepted as indicative of others, and appropriate measures should be undertaken. In any consideration of the role of the vitamins it is important to remember that their primary function lies in their role as the chemically active portion of many coenzymes which are essential for the normal metabolism, and consequently the normal function, of all living cells.

DR. JONATHAN RHOADS, Philadelphia: Drs. Hartzell, Winfield and Irvin have done remarkable work in collecting twenty cases of this relatively infrequent complication and in obtaining specimens from the patients at the time of the accident. The experiments on wound healing carried out in dogs by Dr. Ravdin and his associates showed that severe depletion of the plasma proteins rendered these animals incapable of normal fibroplasia. Wound disruption was frequent in their dogs, and sections of the wound as late as fourteen days after operation showed but few fibroblasts. Dogs similarly prepared prior to operation but which received lyophile plasma immediately after operation healed in a normal manner. Vitamin C deficiency interferes with wound healing by a different mechanism, but its relation to wound healing is equally susceptible of proof in the experimental animal. However, while these investigations strongly indicate that these two deficiency states may prevent normal wound healing, to show that they really are of practical importance in patients required just such a study as Dr. Hartzell and his associates have presented. As they have rightly pointed out, there are undoubtedly many possible causes of wound dehiscence and it is indeed surprising that all these twenty patients should show hypoproteinemia and that nineteen of them should show a C avitaminosis. It is important to realize that hypoproteinemia connotes not only a reduced concentration of protein in the circulating plasma but also a depletion of the labile protein stores of the body and a reduction in the total plasma volume. Thus, in some of the hypoproteinemic dogs in Whipple's laboratory it was found that the plasma volume was reduced about 50 per cent. This probably results in some alterations of the peripheral circulation. Whether the delay in fibroplasia which Ravdin and his collaborators have observed in the hypoproteinemic dog is due to the alteration in the colloid osmotic pressure of the blood, to the effect on the circulation of the associated decrease in blood volume or to the lack of labile protein for repair purposes is not known but is the subject of continued investigation.

DR. MARSHALL K. BARTLETT, Boston: It is clear after listening to the paper of Drs. Hartzell, Winfield and Irvin that wound healing as seen in the clinical patient is a complicated problem with many factors, and it probably will take a long time to sort these out and assign the proper importance to each. Considering vitamin C as one of these factors, I think that Drs. Lund and Crandon are to be congratulated on the prolonged experiment they carried out in producing clinical scurvy. The striking thing about it is the length of time it took to produce clinical scurvy in this young man. One factor in that, of course, may be that he was in most excellent health and probably saturated with vitamin C and all the other necessary factors at the start. In relation to that, I hope you all noticed how long that man's plasma vitamin C level was zero before any evidence of interference with wound healing could be shown. It may well be that the determination of vitamin C level in the white cells may prove to be of far more importance in predicting the presence of impending scurvy than a simple determination of the plasma vitamin C.

DR. CHARLES C. LUND, Boston: We have shown that vitamin C deficiency can produce absolute failure of healing, but I think this is rather uncommon in clinical cases. The evidence we have already points in this direction. The splendid work of Whipple and his associates must never be forgotten. A few years ago, just before vitamins were considered and before plasma protein was considered, they reduced the wound disruptions at their hospital 80 per cent merely by improving their surgical technic. We must never forget that we are surgeons by trying to get away with poor technic by feeding vitamins. It can't be done. The same thing applies to the plasma protein. I haven't studied it, but I think it is perfectly possible that reduced plasma protein is more important in relation to the chemistry of healing than is vitamin C. In going over the cases that I have not had time to talk about in detail today, most of them are failures of surgical technic rather than the result of any chemical deficiencies, and, of the ones that are chemical, even they have in some cases some questionable factor of technic. Dr. Mackie mentioned that the vitamins are of fundamental importance in the nutrition. Crandon got very weak at the end of this experiment. He took a test on a treadmill at the Harvard Business School fatigue laboratory, and on the treadmill he lasted just sixteen seconds. Dr. Dill tells me that the weakest Harvard student he ever tested went a minute. At the termination of this experiment he stayed on his diet for ten days while he was given vitamin C alone. On the tenth day his muscular strength had come back to the point that put him in the class with the weakest Harvard student, and without any gain of weight and without any change in diet, so that there couldn't have been any other factor than vitamin C. Subsequent to this when he went off the diet he gained a pound a day for the next two weeks and we have still further work to do along the line of further tests as he develops his muscular strength back. Therefore this vitamin must have some function of importance that goes beyond wound healing. However, we do not know that it has anything to do with surgery now unless muscular weakness is a factor in surgical results, as it well may be.

DR. JOHN B. HARTZELL, Detroit: Dr. Singleton is an advocate of the transverse type of incision. Because of the limits of time we omitted the data which relate to the type of incision with reference to the incidence of evisceration. While it may be argued that it is to be expected that the vertical incision eviscerates more commonly because it is more commonly used, our data indicate that evisceration does not occur in the type of incision advocated by Dr. Singleton. Likewise, we omitted in our discussion the relationship of infection, but this will be found in the published paper, as well as the fact that no type of suture material is proof against disruption.

THE SYNTHETIC ESTROGEN STILBESTROL

AN EXPERIMENTAL AND CLINICAL EVALUATION

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The natural estrogens have proved their value in the treatment of the severe menopausal syndrome, vaginitis of children and senile women, and certain types of amenorrhea, migraine and abnormal breast hyperplasia. Two principal drawbacks attend the clinical use of the natural estrogens—the high cost, especially when large doses are required, and the loss of potency when administered orally. The advantage of the oral administration of endocrine products in the attempt to overcome a relative or actual deficiency is apparent when one recollects that the various hormones are normally produced in minute quantities at a relatively steady rate. This process cannot be imitated by hypodermic injections at intervals of two or three days.

For these and other less important reasons, the need of an orally potent, synthetic estrogen is constantly engaging the attention of the biochemist and the clinician. When Dodds and his associates [1] announced in 1938 the synthesis of the highly active estrogen stilbestrol, the product was welcomed for clinical trial with guarded hopefulness throughout the world.

Stilbestrol is a stilbene derivative, unrelated to the sterols and totally foreign to the human economy. The acetate and propionate of stilbestrol have equal estrogenic properties and possess the additional advantage of slower absorption when given parenterally.[2] In the investigation of stilbestrol herein reported, we set out to determine:

1. The comparative potency of the product in the animal in terms of the international unit of estrone.
2. Its rate of absorption and excretion in the human being.
3. Its therapeutic effectiveness as gaged by its ability to produce growth of the endometrium and withdrawal bleeding in castrated, menopausal and amenorrheic women; and by its relative effectiveness in relieving the various conditions wherein the natural estrogens are successfully employed.
4. The incidence of toxic symptoms in the human being.
5. The possibility of tissue damage in the human being.
6. Its damaging effects on the vital organs of animals.

THE BIOLOGIC POTENCY OF STILBESTROL IN TERMS OF THE INTERNATIONAL UNIT OF ESTRONE

An international unit of estrone is 0.1 microgram of the substance. Ten international units (1 microgram) of estrone equals 1 Allen-Doisy rat unit. The relative potency of other estrogens may be ascertained in terms of the international unit by assay against a known number of units of estrone.

Repeated assays in our laboratory uniformly showed that 0.2 microgram of stilbestrol, given hypodermically in three divided doses, evokes vaginal estrus in the adult castrated rat—the Allen-Doisy rat unit. Its biologic potency when given hypodermically is therefore five times greater than that of estrone and equal to that of estradiol benzoate. Of greater interest is the fact that the introduction of 1 microgram (5 rat units) of stilbestrol into the stomach of the castrated rat produces full estrus. It requires either 20 micrograms (20 rat units) of estrone or 2 micrograms (20 rat units) of estradiol, given in like manner, to produce the same effect.

It will be seen later that the ratio between the oral and the hypodermic doses of stilbestrol is 5 to 1 in the human being as well as in the rat, in contrast to a ratio of 20 to 1 in terms of the rat unit for the natural estrogens.[3]

THE RATE OF ABSORPTION AND EXCRETION OF STILBESTROL

The optimal dosage of a given estrogenic substance must ultimately be determined by trial and error. Except in instances of vaginitis in children and senile women, dependence on the character of the vaginal smear is clinically unsound. Shorr, Robinson and Papanicolaou,[4] who have studied the subject extensively, state that "there is no necessary correlation between the degree of symptomic improvement and the extent of the smear change. The level of the smear change at which amelioration of symptoms takes place varies with the individual patient."

Studies on the rate of absorption and excretion of estrogens likewise give little information concerning optimal dosage. Such data do, however, determine the maximum intervals at which hypodermic treatment must be given. If, for instance, the quantity injected were totally eliminated in twenty-four hours, injections at intervals of three or four days would leave the patient without the benefit of the estrogen during most days of treatment. As seen in table 1, quantities of estrogenic substance far greater than those current during the premenstruum of normal women are present in the urine of castrated women on the third day after a single injection of 1 or 2 mg. of stilbestrol. Since the amount excreted in the urine reflects fairly accurately the relative content of estrogen in the blood, it is fair to assume that injections of adequate quantities twice weekly are sufficient for clinical purposes.[5]

That stilbestrol is readily absorbed from the gastrointestinal tract is evident from the fact that as little as

TABLE 1.—*The Rate of Excretion of Active Estrogen in Castrated Women After a Single Hypodermic Dose of Stilbestrol*

Quantity of Stilbestrol Administered Hypodermically as a Single Dose	Number of Rat Units of Active Estrogen in the Daily Output of Urine Days After the Administration of a Single Hypodermic Dose of Stilbestrol				
	One	Two	Three	Four	Five
1.0 mg.	250.0	100.0	6.6	....	....
1.0 mg.	.....	.....	34.0	3.3	....
2.0 mg.	100.0	50.0	9.9	....	....
2.0 mg.	66.6	26.6	....	10.0	3.3
2.0 mg.	.....	500.0	27.0	20.0	....
2.0 mg.	100.0	75.0	50.0	25.0	10.0
2.0 mg.	100.0	400.0	66.6	13.2	3.3
2.0 mg.	.....	66.6	40.0	3.3	10.0

From the Department of Gynecology, Mount Sinai Hospital.

Read before the Section on Pharmacology and Therapeutics at the Ninety-First Annual Session of the American Medical Association, New York, June 12, 1940.

1. Dodds, E. C.; Goldberg, L.; Lawson, W., and Robinson, R.: Estrogenic Activity of Certain Synthetic Compounds, Nature, London **141**:247 (Feb. 5) 1938.

2. Caffier, P., and Oezkayaalp, E. S.: Zur Frage der Ausscheidung der Stilben-Präparate, Zentralbl. f. Gynäk. **62**:1218 (June 3) 1939.

3. Papanicolaou, G. N., and Shorr, Ephraim: Action of Ovarian Follicular Hormone in Menopause, as Indicated by Vaginal Smears, Am. J. Obst. & Gynec. **31**:806 (May) 1936. Shorr and Papanicolaou.[4]

4. Shorr, Ephraim; Robinson, F. H., and Papanicolaou, G. N.: A Clinical Study of the Synthetic Estrogen Stilbestrol, J. A. M. A. **113**:2312 (Dec. 23) 1939.

5. Mazer, Charles, and Israel, S. L.: Studies on the Optimal Dosage of Estrogens, J. A. M. A. **108**:163 (Jan. 16) 1937.

0.2 mg. given daily to the castrated woman maintains a level of estrogen excretion comparable to that current in the normal woman during the week prior to menstruation (table 2).

THE THERAPEUTIC EFFECTIVENESS OF STILBESTROL

It is obviously impossible to review, in this short presentation, the extensive clinical reports on the use of stilbestrol in the various conditions in which the natural estrogens are commonly employed. We are limited by necessity to an evaluation of the results obtained in the 189 cases embraced in this report (table 3). These results, summarized in the following paragraphs, confirm, in the main, the observations of others that stilbestrol produces all the clinical effects of the natural estrogens in those who tolerate the substance.

TABLE 2.—*The Rate of Excretion of Active Estrogen in Castrated Women with the Administration of Daily Oral Doses of Stilbestrol*

Daily Oral Dose of Stilbestrol	Number of Rat Units of Active Estrogen in the Daily Output of Urine Days of Administration of Stilbestrol					
	One	Two	Three	Four	Five	Six
0.1 mg.	....	....	13.3	13.3	....	....
0.1 mg.	6.6	6.6	6.6	....	....	3.3
0.1 mg.	3.3	3.3	3.3	3.3	20.0	6.6
0.2 mg.	13.3	3.3	16.0	20.0	16.0	6.6
0.2 mg.	40.0	26.6	6.6	6.6	....	....
0.2 mg.	21.0	21.3	17.3	13.3	13.3	21.0
0.5 mg.	20.0	20.0	160.0	133.0	160.0	160.0

One hundred and fifty patients presenting severe menopausal symptoms, such as frequent flushes, headache, depression, insomnia and impairment of memory, were given from 0.2 to 5 mg. of stilbestrol daily by the oral route or every fourth day parenterally. Thus the total oral dose was four times the hypodermic dose, since it was taken daily and not every fourth day.

EFFECT ON THE MENOPAUSAL SYNDROME

TABLE 3.—*Clinical Classification of 189 Patients Treated with Stilbestrol*

Indication	No. of Patients
Menopausal syndrome	150
Amenorrhea	19
Suppression of lactation	8
Juvenile vulvovaginitis	4
Migraine	4
Diabetes mellitus complicating the menopause	4
Total	189
Method of Administration of Stilbestrol	
Route	**No. of Patients**
Oral	103
Hypodermic	70
Alternating—oral or hypodermic	16

Twenty-eight of the group (18.7 per cent) showed symptoms of intolerance to the substance at an early stage of the treatment, irrespective of the mode of administration. The remaining 122 patients received treatment for periods of from eight to forty weeks. The wide variation in length of treatment is partly accounted for by the appearance of intolerable side-effects in eight patients after two or more months of treatment.

Eighty-three of the 122 patients (68 per cent) were totally relieved and 34 (27.9 per cent) were only partly relieved of their symptoms during the period of observation of several months. The symptoms of the remaining 5 patients (4.1 per cent) were not influenced by the treatment (table 4). The results in the 122 patients who tolerated the substance for at least two months were essentially in accord with the majority of published observations on the use of stilbestrol for the relief of the menopausal syndrome and are, moreover, significant because they were achieved by means of oral administration alone in 58 (49 per cent) of the patients treated.

The effectiveness of stilbestrol given orally is in striking contrast to the inactivity of the natural estrogens, which lose 95 per cent of their potency when thus administered.[6] The clinical use of stilbestrol would, indeed, be highly advantageous were it not accompanied by side-effects in a considerable number of instances.

Sporadic uterine bleeding either during or after treatment occurred in 15 of the 79 postmenopausal women (19 per cent) in the group of 150 climacteric patients—an incidence of estrogen-induced bleeding comparable to that observed in postmenopausal patients treated with equivalent hypodermic doses of the natural estrogens. The severity of the uterine bleeding in some of the treated patients necessitated temporary withdrawal of treatment, uterine curettage or the simultaneous administration of testosterone propionate. In the 6 who were curetted while bleeding, a hyperplastic endometrium was obtained. The induction of uterine bleeding from an overgrown endometrium by the oral administration of the substance to women who had not menstruated for years is further evidence of its high degree of potency when given by this route. The oral administration of the commercially available natural estrogens rarely evokes uterine bleeding in either menopausal or amenorrheic women.

TABLE 4.—*Results of Adequate Stilbestrol Treatment of the Menopausal Syndrome in the 122 Women Who Tolerated the Substance*

Effect on Symptoms	Route of Administration of Stilbestrol			Total No. of Patients	Percentage
	Hypodermic	Oral	Alternating		
Marked relief	26	47	8	83	68
Moderate relief	25	7	2	34	27.9
No relief	1	4	0	5	4.1

EFFECT ON AMENORRHEA

In amenorrheic women, the natural estrogens have been employed in the hope of increasing the size and vascularity of the uterus, thereby rendering it more responsive to an improved pituitary-ovarian activity brought about by other agents. To these patients, the estrogen must be administered intermittently (only two weeks of the month) in order to avoid inhibition of the anterior hypophysis, which would defeat the very purpose of the treatment. In order to induce bleeding from a well developed endometrium, a total of 50,000 rat units of estrogen (the equivalent of a half million international units of estrone) must be given hypodermically in five divided doses.[7] Uterine bleeding, grossly indistinguishable from normal menstruation from a highly proliferative endometrium, almost invari-

6. Shorr, Ephraim, and Papanicolaou, G. N.: Action of Gonadotropic Hormones in Amenorrhea as Evaluated by Vaginal Smears, Proc. Soc. Exper. Biol. & Med. 41: 629 (June) 1939.

7. Kaufmann, C.: Echte Menstruation bei einer kastrierten Frau durch Zufuhr von Ovarialhormonen, Zentralbl. f. Gynäk. 57: 42 (Jan. 7) 1933. Clauberg, C.: Nachweis der Wirkung künstlich zugeführten Luteohormons am menschlichen Uterus, Zentralbl. f. Gynäk. 57: 1461 (June 24) 1933.

ably follows within a week or ten days the withdrawal of such intermittent treatment.

Stilbestrol was thus employed for 19 amenorrheic women. The treatment of 4 was stopped after the first or second day because of nausea, vomiting or epigastric pain. The hypodermic administration of at least 10 mg. of stilbestrol (equivalent to 50,000 rat units or a half million international units of estrone), given in five divided doses over a period of two weeks, produced menstruation-like bleeding in six of seven attempts. Smaller doses similarly administered failed to evoke more than mere staining. The oral administration of 5 mg. daily over a period of ten days (a total dose of 50 mg.) was successful in all of seventeen attempts. Smaller total doses, such as 20 to 30 mg., similarly administered failed to induce withdrawal bleeding in seven of nine attempts (table 5).

It is interesting to note that the ratio between the oral and the hypodermic doses of stilbestrol in the induction of withdrawal bleeding in amenorrheic women is five to one as it is in the induction of artificial estrus in the castrated rat. Moreover, the minimum effective, total hypodermic dose of stilbestrol in terms of the international unit of estrone is identical as far as withdrawal bleeding is concerned with that of the natural estrogens.

TABLE 5.—*Stilbestrol-Induced Withdrawal Bleeding in Fifteen Amenorrheic Women*

Route and Interval of Administration	Quantity of Stilbestrol: Individual Dose	Quantity of Stilbestrol: Total Dosage	Total Number of Attempts to Induce Bleeding*	Results: Success	Results: Failure
Hypodermic, every third day	5 mg.	25 mg.	4	3	1
	2 mg.	10 mg.	3	3	0
	1 mg.	5 mg.	1	0	1
Oral, every day	5 mg.	50 mg.	17	17	0
	3 mg.	30 mg.	8	2	6
	2 mg.	20 mg.	1	0	1

* Several attempts were made in some of the 15 patients.

EFFECT ON LACTATION

Eight puerperal women who for various reasons could not nurse their infants were given daily from 3 to 10 mg. of stilbestrol orally for a period of from two to four days with complete suppression of lactation—an effect comparable to that obtained with large doses of the natural estrogens given hypodermically.[8] None of these 8 patients exhibited any side effects, such as nausea, vomiting or abdominal pain, despite the large doses administered. The unusual tolerance of pregnant and puerperal women to large doses of stilbestrol was noted by Priscilla White,[9] Greenhill [10] and others.

EFFECT ON MIGRAINE

Four patients with frequent and severe attacks of migraine received stilbestrol. Two of them, given the substance orally in daily doses of 1 and 2 mg. for three and two months respectively, tolerated it well and were relieved of the migraine during the period of treatment. The remaining 2 patients received 2 mg. of the substance hypodermically every third day for a period of one month without untoward reactions, but the migraine was not influenced by the treatment.

Similar results in migraine are obtainable with comparable doses (5,000 to 10,000 rat units) of the natural estrogens given hypodermically at intervals of four days.[5]

EFFECT ON JUVENILE VULVOVAGINITIS

Four children with vulvovaginitis were treated with stilbestrol. Two of the 4 received 1 mg. daily by mouth for a period of one month without side-effects. The vaginal epithelium became intensely cornified within two weeks, and the vaginal smears thereafter remained free from pus and pathogenic bacteria during follow-up periods of three and eight months respectively. The hypodermic administration of 1 mg. of the substance every third day for a period of six weeks produced a similar result in the other 2 children. Owing to the paucity of clinical material, the minimum effective dose of stilbestrol in this condition was not ascertained.

TABLE 6.—*The Relation Between the Size of the Dose of Stilbestrol and the Incidence of Toxic Symptoms*

Route and Interval of Administration	Dose of Stilbestrol	Total No. of Patients*	Patients with Toxic Symptoms: Number	Patients with Toxic Symptoms: Percentage
Oral, daily	0.2 to 0.5 mg.	31	1	3.2
	1 mg.	51	9	17.7
	2 mg.	28	6	21.3
	3 mg.	16	6	37.4
	5 mg.	32	10	31.2
Hypodermic, every fourth day	0.2 to 0.5 mg.	43	1	2.3
	1 mg.	38	5	13.2
	2 mg.	21	11	52.4
	5 mg. or more	7	3	42.8

* Several patients are herein listed more than once because they reacted differently to variation in dosage.

THE INFLUENCE OF STILBESTROL ON THE INSULIN REQUIREMENT OF DIABETIC PATIENTS

The ability of large doses of the natural estrogens to lower the blood sugar level of diabetic patients was reported by us [11] in 1935 and, more recently, by Spiegelman.[12] These clinical observations are in accord with the experimental findings of Barnes and his associates [13] that the blood sugar level of pancreatectomized dogs injected daily with 200 rat units of estrogen is appreciably decreased.

TABLE 7.—*The Time of Appearance of Toxic Symptoms in Relation to the Mode of Administration of Stilbestrol*

Time of Appearance of Toxic Symptoms	Route of Administration: Oral	Route of Administration: Hypodermic	Patients with Toxic Symptoms: No. of Patients	Patients with Toxic Symptoms: Percentage
Early	27	5	32	76.2
Delayed	2	8	10	23.8

Theoretically, the fall in the blood sugar in the diabetic, both human and animal, following injections of the natural estrogens is attributable to inhibition of the diabetogenic function of the anterior lobe of the pituitary, since hypophysectomy in the pancreatectomized dog also reduces the blood sugar.

8. Mayor, J. M.: Die hemmende Wirkung des Follikelhormons auf die Milchsekretion der Wöchnerin, Zentralbl. f. Gynäk. **60**: 2379 (Oct. 3) 1936.

9. White, Priscilla: Personal communication to the authors.

10. Greenhill, J. P.: Editorial Comment, in De Lee, J. B., and Greenhill, J. P.: 1939 Year Book of Obstetrics and Gynecology, Chicago, Year Book Publishers, Inc., 1940.

11. Mazer, Charles; Meranze, D. R., and Israel, S. Leon: Evaluation of the Constitutional Effects of Large Doses of Estrogenic Principle, J. A. M. A. **105**: 257 (July 27) 1935.

12. Spiegelman, A. R.: Influence of Estrogen on Insulin Requirement of the Diabetic, Proc. Soc. Exper. Biol. & Med. **42**: 307 (Feb.) 1940.

13. Barnes, B. O.; Regan, J. F., and Nelson, W. O.: Improvement in Experimental Diabetes Following the Administration of Amniotin, J. A. M. A. **101**: 926 (Sept. 16) 1933.

In view of these clinical and experimental observations on the effect of the natural estrogens on the blood sugar of the diabetic, it was interesting to determine whether stilbestrol also reduces the insulin requirement of diabetic patients. The following case histories summarize the observations made during the treatment of four frankly diabetic, climacteric women with the substance:

CASE 1.—B. S., aged 54, who had diabetes and hypertension for many years, failed to stabilize on a restricted diet and 10 units of insulin daily for two months. The oral administration of 5 mg. of stilbestrol daily for a period of six weeks eliminated the need of insulin and reduced the average blood sugar level from 180 to 123 mg. However, the marked glycosuria persisted. The hypodermic administration of 1 mg. of in weight. Because of her limited diet, the fasting blood sugar was only 140 mg. and the urine was free from sugar. Physical examination revealed nothing abnormal other than underweight. The patient was put on an unrestricted diet and was given 5,000 rat units of estradiol benzoate (equivalent to 50,000 international units of estrone) hypodermically twice weekly until April 1, 1939. She gained 12 pounds (5.4 Kg.) and was relieved of all symptoms. Her blood sugar on repeated examinations showed a normal level, and the urine was free from reducing substance and ketone bodies.

A complete laboratory study (case 29, table 8) on April 1, 1939 preliminary to the administration of stilbestrol showed no abnormalities aside from a slight hypercholesterolemia. From April 2, 1939 to March 26, 1940 she received 1 mg. of stilbestrol hypodermically twice weekly, equivalent in terms of the international unit of estrone to the dose of estradiol

TABLE 8.—*Complete Laboratory Studies of Ten Women Before and After Intensive Treatment with Stilbestrol*

Patient	Length of Treatment	Total Dose, Mg. Hypodermic	Total Dose, Mg. Oral	Basal Metabolic Rate Before	Basal Metabolic Rate After	Hippuric Acid Excretion, Gm. Before	Hippuric Acid Excretion, Gm. After	Icterus Index Before	Icterus Index After	Hemoglobin, % Before	Hemoglobin, % After	Red Blood Cells, Millions Before	Red Blood Cells, Millions After	White Blood Cells, Thousands Before	White Blood Cells, Thousands After	Lymphocytes, % Before	Lymphocytes, % After
C5	3 months	..	534	+20	+26	3.3	3.49	8.6	3.6	90	75	4.16	3.56	5.0	6.8	28	23
A1	35 days	..	825	—13	— 6	*	*	9.6	6.8	99	100	4.2	4.09	5.8	6.7	39	27
39	6½ months	35	...	—14	— 9	3.91	3.69	5.0	4.2	81	70	4.02	3.7	8.65	5.4	24	28
29	12 months	60	...	+21	+19	2.50	2.99	5.2	5.2	85	90	4.0	4.32	5.0	5.6	30	25
53	11 months	74	150	—15	—10	3.3	3.3	6.3	5.7	90	95	4.56	4.38	8.8	5.8	28	22
61	13 months	97	48	+ 9	+11	3.45	3.5	6.2	7.0	99	99	4.24	4.27	6.6	7.4	37	26
64	3 months	..	370	+24	+ 4	2.84	3.25	5.4	4.8	97	90	4.35	4.01	8.8	9.6	29	25
136	3 months	42	...	— 4	+ 1	4.1	4.05	4.4	5.0	99	105	4.42	4.8	8.0	5.4	32	25
120	11 months	50	161	— 8	— 9	4.6	3.23	7.2	6.8	92	102	4.2	5.03	5.0	5.2	51	45
42	14 months	56	55	— 2	— 2	4.09	3.72	4.6	4.5	87	93	4.48	4.06	10.2	5.6	17	27

Patient	Length of Treatment	Polymorphonuclear Leukocytes, % Before	Polymorphonuclear Leukocytes, % After	Platelets, Thousands Before	Platelets, Thousands After	Bleeding Time, Minutes Before	Bleeding Time, Minutes After	Clotting Time, Minutes Before	Clotting Time, Minutes After	Blood Sugar Before	Blood Sugar After	Blood Urea Nitrogen Before	Blood Urea Nitrogen After	Blood Creatinine Before	Blood Creatinine After	Blood Uric Acid Before	Blood Uric Acid After
C5	3 months	71	75	300	250	1	1.5	4	4	192	122	11.2	10.8	1.1	1.4	3.84	3.96
A1	35 days	78	76	210	250	0.5	2	5	5	81	85	9.7	9	1.4	1.4	2.56	3.36
39	6½ months	69	70	200	300	1	0.5	5	4	81	94	12.2	13	1.1	1.8	2.56	3.3
29	12 months	67	72	300	300	1	1	5	4	122	112	13	13.7	1.7	1.5	2.98	2.75
53	11 months	68	76	220	270	1	1	5	4	118	158	11.7	13.4	1.3	1.5	2.34	2.54
61	13 months	59	63	250	250	1	1	3	5	94	95	14.3	14.5	1.9	1.6	2.4	2.99
64	3 months	65	72	190	210	0.5	1	4	4	89	85	9.5	11	1.6	1.3	3.68	3.2
136	3 months	65	71	230	200	0.5	1	3	4	89	84	14	11.6	1	1.3	2.58	3.0
120	11 months	44	59	190	230	1.5	1.5	4	5	87	92	10.4	10.7	1.2	1.1	2.1	2.88
42	14 months	80	70	200	250	2	0.5	5	5	98	95	11.2	12.8	1.2	1.3	3.3	3.44

Patient	Length of Treatment	Plasma Chloride Before	Plasma Chloride After	Plasma Cholesterol Before	Plasma Cholesterol After	Alkali Reserve Before	Alkali Reserve After	Blood Calcium Before	Blood Calcium After	Blood Phosphorus Before	Blood Phosphorus After	Total Protein Before	Total Protein After	Serum Albumin Before	Serum Albumin After	Serum Globulin Before	Serum Globulin After
C5	3 months	492	542	240	186	54	58	10.3	10.4	3.1	3.04	7.87	6.34	5.16	3.79	2.71	2.55
A1	35 days	518	524	188	172	56	59	10.4	10.6	2.64	3.08	6.81	6.25	4.15	3.8	2.66	2.45
39	6½ months	484	558	210	252	54	54	9.9	9.6	2.8	2.96	5.69	5.56	3.85	4.46	2.05	1.1
29	12 months	544	572	260	208	50	67	11.4	9.8	2.64	3	6.4	5.16	3.98	3.14	2.42	2.02
53	11 months	540	572	245	256	58	55	11.1	10.4	2.8	2.8	4.75	5.75	3.39	3.45	1.36	2.30
61	13 months	546	562	300	285	58	58	10.6	10.4	3	3.08	6.56	6.5	3.91	4.07	2.65	2.42
64	3 months	552	530	192	250	58	62	8.9	10.1	2.2	2.3	6.75	6.44	3.92	4.09	2.83	2.35
136	3 months	505	538	202	204	57	60	11.5	10.9	3.56	3.4	6.56	5.63	3.33	3.53	2.23	2.1
120	11 months	505	610	192	190	61	57	10.8	9.9	3.76	3.24	6.81	6.88	3.06	3.87	2.83	3.01
42	14 months	548	586	245	210	49	51	10	9.8	2.04	2.72	6.25	6.8	4.07	4.64	1.61	2.16

* Patient vomited.

stilbestrol every fourth day and 10 units of insulin daily for a period of three months maintained her blood sugar at a normal level with only an occasional spill of sugar in the urine.

CASE 2.—S. A., aged 48, complained of flushes, weakness, pruritus vulvae, interdigital dermatitis, insomnia and fatigue. Complete blood studies showed 192 mg. of sugar and 240 mg. of cholesterol. All other values were normal. The urine showed only a trace of sugar and no acetone. She was given orally from 3 to 15 mg. of stilbestrol daily and an unrestricted diet for a period of three months, during which time a gradual reduction in the hyperglycemia and complete relief of the symptoms occurred. Another complete study done at the termination of treatment showed a reduction of 70 mg. in the sugar and of 54 mg. in the cholesterol (case C5, table 8).

CASE 3.—M. D., aged 57, who had diabetes and who was maintained relatively free from hyperglycemia by a rigid diet for several years with a resultant severe weight loss, was first seen by us in September 1938. She complained of marked weakness, nervousness, hot flushes, sweats and excessive loss benzoate she had previously received. During the year of treatment there was complete freedom from symptoms and hyperglycemia, but the cholesterol content of the blood remained approximately the same. Withdrawal of the stilbestrol on March 26, 1940, because of the appearance of malaise, nausea and epigastric discomfort, resulted in a rise of 58 mg. in the blood sugar and the appearance of marked glycosuria.

CASE 4.—D. L., aged 47, who had chronic diabetes, consulted us in the latter part of 1935 for the relief of severe menopausal symptoms. Until then her maintenance requirement of insulin had been 22 units daily. Examination showed no abnormalities other than a marked hypertension and a blood sugar of 179 mg. despite the high dose of insulin. Her urine was free from sugar and ketone bodies. Without her diet being changed, she was given 10,000 rat units of estradiol benzoate (equivalent to 100,000 international units of estrone) hypodermically twice weekly. At the end of a month, 10 units of insulin daily was sufficient to maintain the blood sugar at a normal level. During the following four years, while she was receiving varying doses of estradiol benzoate for the relief of menopausal symptoms, it was found that her insulin requirement varied inversely

with the quantity of estrogen administered. When only 2,000 rat units of estrogen was given twice weekly, she required a minimum of 15 units of insulin daily.

On March 14, 1939 stilbestrol was substituted for the estradiol benzoate. She was given 1 mg. of stilbestrol hypodermically twice weekly and 10 units of insulin daily for one year. On this regimen she remained free from hyperglycemia and glycosuria, evincing no intolerance to the stilbestrol. However, withdrawal of the insulin resulted in hyperglycemia and glycosuria. After a year's treatment with stilbestrol she developed malaise, epigastric distress and nausea without, however, showing evidence of either hepatic or renal damage (case 61, table 8).

COMMENT

It is evident from a survey of the literature and the histories of these four diabetic climacteric patients that neither the natural estrogens nor the synthetic product stilbestrol substitutes for insulin completely. When 1 mg. of stilbestrol (equivalent to 50,000 international units of estrone) is given hypodermically twice weekly, the insulin requirement is markedly decreased. There is, nevertheless, no advantage in the use of the estrogens, natural or synthetic, in the treatment of diabetes mellitus unless a severe menopausal syndrome coexists.

THE INCIDENCE OF TOXIC SYMPTOMS FROM STILBESTROL IN THE HUMAN BEING

Most of the reports of clinical investigations conducted in Europe and, to a lesser degree, in this country indicate that, unlike the natural estrogens, stilbestrol produces toxic symptoms in from 5 to 80 per cent of the patients treated.[14] The available reports are so overwhelmingly discordant that one is at a loss in forming an opinion as to the fitness of the product for human use. The reported toxic symptoms were in the form of nausea, vomiting, epigastric distress, abdominal pain, diarrhea, lassitude, cutaneous rashes and even acute psychotic reactions. They occurred equally in patients treated with stilbestrol by either the oral or the hypodermic route.

An analytic study of 189 patients treated with stilbestrol for conditions described in the foregoing paragraphs shows the occurrence of side-effects reasonably attributable to the administration of the substance and severe enough to require cessation of treatment of 42 of the patients (22.2 per cent).

The untoward reactions of these 42 patients consisted mostly of nausea and vomiting. In a few, epigastric distress and abdominal pain were dominant. One patient who was given 5 mg. of stilbestrol twice daily orally had such severe epigastric pain at the start of treatment that she was removed to a hospital under the mistaken diagnosis of acute cholecystitis. Two of the 42 patients had acute dermatitis of the vulva, which may or may not have been caused by the substance. One of the group complained of a severe headache after each dose of 5 mg. given hypodermically. Another one of the group discontinued the drug because of the occurrence of trifacial neuralgia. A mild degree of nausea for a few days was complained of by 9 additional patients. It was not sufficient, however, to require discontinuation of treatment.

It must be remembered, however, that in the treatment of a large number of patients, especially of the menopausal type, over a period of many months, symptoms totally unrelated to the drug administered may appear in some of them. For instance, vertigo, paresthesias and even psychotic reactions are not uncommon among menopausal women. Should these symptoms develop during the administration of a given drug, there would be a natural tendency to correlate them as cause and effect. However, for the sake of accuracy, the appearance of all untoward symptoms in any of the 189 patients are herein credited to the drug.

There seems to exist, as pointed out by MacBryde,[15] a definite relationship between the size of the dose of stilbestrol and the incidence of toxic symptoms (table 6). For example, only 1 of 31 patients (3.2 per cent) who had received from 0.2 to 0.5 mg. by mouth daily for a period of months could not tolerate the substance, whereas 9 of 51 patients (17.7 per cent) who had received 1 mg. by mouth daily were intolerant to the drug. The incidence of nausea and vomiting rose gradually with the increase in size of the dose and exceeded 30 per cent when 3 or 5 mg. was given daily by the oral route. These are, however, enormous doses, 5 mg. of stilbestrol being equal to 250,000 international units of estrone. It must nevertheless be remembered that equivalent oral doses of estradiol have never, in our experience, produced any untoward symptoms. The therapeutic effectiveness, however, of orally administered estradiol is doubtful.

TABLE 9.—*Effect of Stilbestrol on the Vital Organs of Rats and Rabbits*

	Daily Dose, Micrograms	Duration of Treatment, Days	Number of Animals	Mortality	Histologic Changes in Organs			
					Liver	Kidney	Spleen	Adrenal
Rats	75	42	10	4	Mild cloudy swelling and congestion	Mild congestion and granular degeneration	Excess pigment deposition	*
Rats	100	48	10	0	Moderate cloudy swelling and congestion	Congestion, cloudy swelling, necrosis	Excess pigment deposition	Normal
Rats	150	48	10	8	Severe congestion	Severe congestion and cloudy swelling	Excess pigment deposition	*
Rats	1,000	45	10	3	Severe congestion, cloudy swelling, hemorrhage and necrosis	Severe congestion, cloudy swelling and granular degeneration	Severe pigment deposition	Severe necrosis of medulla
Rabbits	100	31	2	0	Normal	Normal	Normal	Normal
Rabbits	1,000	31	2	0	Normal	Normal	Normal	Normal
Rabbits	1,500	42	3	0	Mild congestion and fatty degeneration	Mild congestion and cloudy swelling	Mild congestion	*
Rabbits	3,000	26	4	0	Severe congestion, cloudy swelling, hemorrhage and necrosis	Severe congestion and necrosis	Congestion, excess pigmentation	Severe necrosis of medulla

* Tissue not examined.

14. Bishop, P. M. F.; Boycott, Muriel, and Zuckerman, S.: The Estrogenic Properties of "Stilbestrol" (Diethylstilbestrol), Lancet **1**: 5 (Jan. 7) 1939. Shorr, Robinson and Papanicolaou.[4]

15. MacBryde, Cyril M.; Freedman, Harold, and Loeffel, Ellen: Studies on Stilbestrol; Preliminary Statement, J. A. M. A. **113**: 2320 (Dec. 23) 1939.

The hypodermic administration of from 0.2 to 0.5 mg. of stilbestrol every fourth day, comparable in therapeutic effectiveness to like doses given daily by mouth, also produced side effects in only 1 of 43 patients (2.3 per cent). The incidence of toxic symptoms in the hypodermically treated patients likewise gradually rose with the increase in dosage, so that the administration of 2 mg. or more every fourth day resulted in untoward reactions in as many as 52.4 per cent (table 6).

From the foregoing, it is evident that the administration of from 0.2 to 0.5 mg. daily by mouth or every fourth day hypodermically produces gastrointestinal symptoms in only 3 per cent of the patients. These small doses of stilbestrol, representing a potency of from 10,000 to 25,000 international units of estrone, are, however, insufficient for many patients suffering from the menopausal syndrome. If larger doses of estrogen are necessary, stilbestrol cannot and should not be employed because of the high incidence of untoward reactions.

That the gastrointestinal symptoms evoked by the administration of large doses of stilbestrol are of central origin is evident from the fact that the hypodermic administration of comparable doses produces a higher incidence of such symptoms than the oral administration does (table 6).

The time of appearance of toxic symptoms varied somewhat with the mode of administration. They appeared within a day or two of the beginning of treatment in 27 of the 32 patients who were intolerant to the oral administration of stilbestrol but appeared much later in 8 of the 10 who were intolerant to the hypodermic administration of the substance (table 7).

THE POSSIBILITY OF TISSUE DAMAGE FROM STILBESTROL IN THE HUMAN BEING

Clinical observations limited to general physical examination, urinalysis and hemoglobin estimations at regular intervals failed to reveal changes in any of the 139 patients who received stilbestrol for periods varying from one to fourteen months or in any of the 42 patients who showed early or late intolerance to the substance. The 8 puerperal patients who received stilbestrol for only a few days are not included here.

An exhaustive clinical and laboratory study before and after treatment of 10 patients who received total doses of from 35 to 825 mg. of stilbestrol—an average of 274.9 mg. for each patient—likewise failed to show definite evidence of tissue damage. The laboratory studies in each of these 10 patients included determination of the basal metabolism, complete blood count, bleeding and coagulation times, hippuric acid excretion for liver function, urinalysis, alkali reserve and the content in the blood of sugar, urea nitrogen, creatinine, uric acid, chloride, cholesterol, calcium, phosphorus, total protein, albumin and globulin (table 8).

In 2 of these 10 cases (29 and 61, table 8), exhaustively studied before and after a course of treatment with 1 mg. of stilbestrol hypodermically twice weekly, toxic symptoms developed at the end of a year's treatment. The final studies, at this time, showed no significant alterations. Nevertheless, several subsequent attempts to administer stilbestrol in like manner promptly resulted in recurrence of the nausea and epigastric discomfort.

A perusal of table 8 will show a significant shift in the blood cholesterol of 2 patients. Whether or not this was caused by the medication is problematic.

THE EFFECTS OF STILBESTROL ON THE VITAL ORGANS OF RATS AND RABBITS

As seen in table 9, the daily injection of 75 micrograms, or approximately 0.5 microgram per gram of body weight, of stilbestrol for a period of forty-two days in rats resulted in cloudy swelling and congestion in the liver and kidneys, and in the deposit of pigment in the spleen which indicates excessive blood destruction. Daily injections of 1,500 micrograms of stilbestrol, or approximately 0.5 microgram per gram of body weight, for a period of forty-two days in rabbits also produced cloudy swelling of the liver, kidneys and spleen. Larger doses in both species caused severer tissue damage in the form of necrosis. Doses smaller than 0.5 microgram per gram of body weight, given over long periods, produced no discernible changes in the vital organs of the rabbit (table 9).

It therefore seems that both the rat and the rabbit are almost equally susceptible to stilbestrol and that the damaging dose in both species is approximately 0.5 microgram per gram of body weight. It should be remembered however that, as small as these doses seem in terms of weight, the 75 micrograms given daily to the rats represent, in terms of estrogenic potency, 375 rat units or 3,750 international units of estrone. Similarly, the 1,500 micrograms given daily to the rabbits represent 7,500 rat units or 75,000 international units of estrone. It must, moreover, be remembered that even the natural estrogens when given in much larger doses also produce tissue damage in the experimental animal.[16]

From these experimental observations on the toxicity of stilbestrol per gram of body weight of the rat and rabbit, a woman weighing 150 pounds (68 Kg.) would theoretically sustain no tissue damage from the daily hypodermic administration of 30 mg. of stilbestrol. However, as shown in the preceding paragraphs, the susceptibility of the human being to the substance is quite apparent, since as little as 2 mg. given parenterally every fourth day produced toxic side effects.

CONCLUSIONS

The clinical and experimental observations on stilbestrol herein recorded justify the following conclusions:

1. Stilbestrol is a highly active estrogen when administered either orally or hypodermically. The ratio between the effective oral and hypodermic doses is 5 to 1 in the human being as well as in the rat.

2. In women who can tolerate stilbestrol, it produces all the therapeutic effects obtainable with the use of the natural estrogens.

3. Stilbestrol is highly toxic as compared with the natural estrogens, evoking nausea, vomiting, epigastric pain and malaise in 52.4 per cent of patients who receive 2 mg. (equivalent to 10,000 rat units) hypodermically every fourth day. Given orally at this dosage level, the incidence of toxicity is considerably less (21.3 per cent).

4. Stilbestrol may be safely administered in doses not exceeding 0.5 mg. daily by mouth or every fourth day hypodermically. At this dosage level the incidence of nausea and vomiting is only 3 per cent.

5. Tissue damage in the human being resulting from the administration of relatively large doses of stilbestrol,

16. Selye, Hans: On Toxicity of Estrogens with Special Reference to Diethylstilbestrol, Canad. M. A. J. 41:148 (July) 1939.

given over a long period of time, is not demonstrable by physical examination and the laboratory means at our disposal.

6. In the rat and the rabbit, the daily administration of as little as 0.5 microgram of stilbestrol per gram of body weight produces cloudy swelling and congestion in the liver and kidneys. Larger doses produce necrosis of the liver, kidneys and adrenal glands of these species.

ABSTRACT OF DISCUSSION

DR. THEODORE NEUSTAEDTER, New York: I am unable to discuss the intramuscular injection of stilbestrol, for my associates and I have confined ourselves solely to the oral administration of the drug. Our series of menopausal cases numbers 54. These have been treated for a minimum period of six months or more. Our series is larger, but treatment of these hasn't as yet extended over a period of six months. The dosage has varied from 0.1 to 5 mg. three times daily. In this group there were 5 cases of nausea and vomiting, 6 cases of slight nausea which disappeared when the dosage was reduced, 1 gastric upset, 1 case of drowsiness and dizziness and 1 of abdominal distress. On the whole the toxic effects so far have not been especially serious. Peculiarly enough our results, as far as the increase of the size of the dose, are not in accord with the authors', since there are patients who require as much as 15 mg. daily, who tolerate the dose well and whose symptoms are well controlled. The vaginal smear is no indication of symptomatic improvement. I agree with the authors' results. The effectiveness of oral administration is in striking contrast to the use of estrogen by mouth. Larger dosage of estradiol orally is required to produce the particular changes in the endometrium. In some instances, after the withdrawal of therapy, bleeding—which is similar to that found after withdrawal of estradiol—has occurred. The authors report 68 per cent of cases with marked relief. We have found as high as 85 per cent marked relief of the menopausal symptoms with stilbestrol. Possibly when our series is as large as theirs this percentage may be lower. This slide shows the stimulation of a definite follicular effect with a small dose, something we cannot do orally with estradiol or any of the estrogens in small amount.

DR. L. M. RANDALL, Rochester, Minn.: The authors should be commended on this survey of an important situation. All realize the need for an estrogenic substance that can be administered effectively, economically and safely by mouth. Ample evidence exists to prove the estrogenic effectiveness of stilbestrol, and apparently the expense of therapy would be greatly reduced were it generally available. We are now interested chiefly in the safety factor. Dr. Mazer and his colleagues state that 22.2 per cent of all patients who received stilbestrol manifested toxic symptoms that resulted in the cessation of treatment; 17.7 per cent of these patients received a dose of 1 mg. of stilbestrol. It may be noted, however, that the authors gave the patients the benefit of doubt and probably included untoward symptoms that perhaps could not be attributed to the stilbestrol. Their extensive laboratory examination of a group of patients did not indicate any evidence of damage to bodily tissues as far as these tests were able to detect them. One may point out that as yet there is no workable knowledge concerning the metabolism of stilbestrol in the body. Engel has indicated that this substance is not conjugated in the liver; hence one may not take the negative results of these tests too literally. At any rate, it seems reasonable to state that if toxic symptoms do not appear one may safely administer stilbestrol over a long period of time with no detectable evidence of tissue damage. Nor can one yet be certain that some patients may not be encountered who have idiosyncrasies to stilbestrol. One has had experience with cinchophen and dinitrophenol that should make one a little cautious. At the Mayo Clinic we have treated approximately 72 patients in the last fourteen months with doses up to 1 mg. of stilbestrol daily. This may have been administered in divided doses or as a single dose. These patients have been practically all those in whom we were treating menopausal symptoms. In our experience the percentage of toxic symptoms has been less than 5 per cent, corresponding closely to those of Dr. Neustaedter. When the dose has been increased to more than 1 mg. a day the percentage of toxic symptoms has rather sharply increased. Such investigations as reported here, coupled with our experience, lead us to plan to continue with no greater than a 1 mg. dose a day. A substance that has as high an incidence of toxic effects should be used with some circumspection.

DR. A. A. HEROLD, Shreveport, La.: I should like to ask the authors to explain one feature which they brought out, and that is their reference to the beneficial effect on diabetes of this preparation. I notice that they mentioned the fact that large doses were followed by destruction of the adrenals and I wonder if that explains the beneficial effect on the diabetes.

DR. CHARLES MAZER, Philadelphia: The reduction in the blood sugar of diabetic patients by the administration of the natural estrogens or stilbestrol is apparently through inhibition of the diabetogenic hormone of the anterior pituitary lobe. In the depancreatized dog the daily administration of 200 units of estrogen reduces the blood sugar considerably. In diabetic patients we have likewise seen marked reduction in the blood sugar and the insulin requirement when the natural or the synthetic estrogens are administered in adequate doses. That the reduction of the blood sugar in diabetic patients is not through inhibition or destruction of the adrenal cortex is evident from the fact that none of them showed any symptoms of adrenal insufficiency. It would be safe to put stilbestrol on the market if the individual dose were not to exceed 0.5 mg., given either daily orally or every fourth day hypodermically. However, physicians are prone to use large doses, which may produce indiscernible tissue damage. Our means of determining mild tissue damage in the human being are still not all one may desire. Animals, however, show definite evidence of necrosis at the dosage level of 0.5 microgram daily per gram of body weight.

SODIUM PERBORATE OINTMENT AND POISON IVY DERMATITIS

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A recent article in *Public Health Reports*[1] discussed editorially in THE JOURNAL[2] recommends a vanishing cream containing a nonirritating, nonstaining oxidizing agent, such as 10 per cent sodium perborate, as an effective preventive against poison ivy dermatitis. The oxygen liberated by the perborate ointment was said to detoxify the highly allergenic ivy oleoresin. The publicity accorded this new preventive will undoubtedly give many ivy sensitive subjects a false sense of security and result in instances of widespread dermatitis in credulous individuals.

The very stable dermatitis producing fraction of the oleoresin of poison ivy decomposes and becomes inert slowly, if at all, in the presence of large amounts of free oxygen. In my hands this recommended ointment has afforded no greater safeguard against poison ivy dermatitis than has calamine or zinc oxide in vanishing cream, zinc oxide ointment or plain petrolatum, all of which offer only slight mechanical protection.

Since McNair in 1923[3] stated that the milky juice of poison ivy turns black on exposure to the air and thereby loses its toxic properties, physicians have attempted to find some oxidizing agent which would quickly render inert the dermatitis producing sap of this plant. The action of the neutralizing agent must

The persons tested in these experiments have been observed in repeated attacks of clinically acquired poison ivy dermatitis. They are regularly employed by me as patch test subjects and paid from a grant by Eli Lilly & Co. for the study of poison ivy sensitivity.

1. Schwartz, Louis; Warren, L. H., and Goldman, F. H.: Protective Ointment for the Prevention of Poison Ivy Dermatitis, Pub. Health Rep. **55**: 1327 (July 26) 1940.
2. Poison Ivy Dermatitis, editorial, J. A. M. A. **115**: 862 (Sept. 7) 1940.
3. McNair, J. B.: Rhus Dermatitis: Its Pathology and Chemotherapy, Chicago, University of Chicago Press, 1923.

be rapid, since poison ivy dermatitis cannot be prevented if the sap is left in contact with the skin for longer than a few minutes before being removed thoroughly by cleansing with soap and water, ether, acetone and other solvents.[4]

Little was known about patch testing and allergic cutaneous reactions at the time McNair made his statement that the black ivy sap is nontoxic. He apparently formed his erroneous conclusion that the black oxidized sap is nonantigenic because of the absence of irritative rather than lack of true allergic cutaneous reactions.

EXPERIMENTAL STUDY

The fresh milky sap of the poison ivy plant is a marked cutaneous irritant for both man and animal. On exposure to the air this sap turns into a black gummy substance which on aging becomes very hard and slowly loses the greater part of its irritative quality but seems to retain all, or the major portion, of its antigenic potency.

A small drop of the milky juice expressed from the broken end of the petiole of a poison ivy leaf was placed in an open glass container. The sap rapidly became brownish black. After exposure to the air for two months the black, brittle, shellac-like, match-head sized film on the glass was partially dissolved by the addition of 1 ounce (30 cc.) of acetone. Frankly vesicular patch reactions were evoked when the latter material was dropped on the skin of ivy sensitive persons. Control tests were negative.

The trunks of two species of poison ivy (Toxicodendron radicans and T. quercifolia) were blazed with a knife. One week later the black oxidized gummy exudates were carefully collected with a small knife blade, and match-head sized portions were placed in glass containers. After standing exposed to the air for three months the small firm masses were partially dissolved in 1 cc. of ether. When this ether, which contained the soluble dermatitis producing fraction of the sap, was diluted one thousand times with acetone and applied to the skins of ivy sensitive persons, frankly vesicular patch reactions were evoked.

Leaves of the poison ivy plant were crushed between small squares of cotton cloth. Presence of the oleoresin on the cloth was indicated by the black stains which appeared on the squares half an hour later. After storage in open glass containers at room temperature for one year, these squares proved highly allergenic for ivy sensitive persons when moistened with ether and used for patch test material.

The black, oxidized sap of poison ivy is therefore highly potent and not inert as originally stated by McNair.

One cc. of oleoresin extracted from ivy leaves was dissolved in 10 cc. of ether. This mixture was poured into a pint fruit jar, 1 ounce (30 Gm.) of powdered sodium perborate added and the jar half filled with tap water. After thorough shaking, the jar top was removed and the mixture allowed to stand exposed to the air. During the next five days 5 additional ounces of perborate was added to the jar. Almost continuous bubbling of the mixture indicated the liberation of large amounts of free oxygen. After standing for an additional twenty-four hours, ether was added and the mixture thoroughly agitated. The supernatant greenish ether was separated from the underlying water and perborate by separatory funnel. On evaporation of the ether a dark green, gummy mass remained. When diluted ten thousand times with acetone, this material evoked frankly positive patch reactions on ivy sensitive persons. Large amounts of sodium perborate had certainly not rendered the ivy oleoresin inert during a contact period of seven days. Like results were obtained when ivy oleoresins extracted from the bark of branches and from roots were similarly treated with large amounts of perborate.

Saturated solutions of sodium perborate were then mixed with equal parts of 1:100 ether dilutions of ivy oleoresins obtained from leaves, bark and roots. Additional perborate was added at intervals to insure the almost continuous liberation of free oxygen. After standing for two weeks, ether was added to restore the oleoresins to the 1:100 dilution. Patch tests with the three solutions evoked intense vesicular reactions on persons clinically sensitive to poison ivy.

Five drops of ivy oleoresin extracted with ether from freshly gathered ivy leaves were placed in 1 ounce of freshly prepared 10 per cent sodium perborate in vanishing cream. After thorough stirring, the mixture was allowed to stand for one week, a few drops of water and a small amount of sodium perborate being added daily to assure the almost continuous liberation of oxygen. Patch tests with this cream evoked frankly vesicular patch reactions on ivy sensitive persons.

Five drops of the fresh milky sap of poison ivy were placed in 1 ounce of a freshly prepared 10 per cent perborate cream. Water and perborate were similarly added for seven days. Intense reactions were evoked when this cream was then rubbed on the skins of ivy sensitive persons. No reactions were elicited when the cream was similarly applied to nonsensitive controls.

Two cc. of acetone was placed in a 10 cc. glass vial and 1 drop of the fresh milky juice from a broken ivy leaf petiole dropped in the vial and the solution thoroughly agitated. After standing for one week, 2 cc. of water and 1 Gm. of powdered sodium perborate were added. Bubbling of the mixture indicated liberation of free oxygen. After standing for twenty-four hours, 2 cc. of hydrogen peroxide and a small piece of decaying meat were added to the vial. Foaming of the mixture indicated the liberation of large amounts of free oxygen. One cc. of ether was then added to replace the partially evaporated acetone. After thorough agitation the supernatant ether was removed with a pipet. This material evoked frankly vesicular patch reactions on ivy sensitive volunteers. Large amounts of free oxygen had failed to detoxify 1 drop of the fresh milky sap of the ivy plant. This experiment was repeated with drops of milky sap from the three recognized species of poison ivy (Toxicodendron radicans, T. quercifolia and T. diversiloba), all of which are cultivated in my own back yard.

Linear areas of the backs of persons sensitive to ivy were liberally smeared with plain petrolatum, zinc oxide ointment and 10 per cent sodium perborate, 10 per cent calamine and 10 per cent zinc oxide in vanishing cream. One-half hour later the treated sites and untreated cutaneous areas were patch tested with ivy oleoresin diluted one thousand, five thousand and ten thousand times with acetone. There was no demonstrable reduction in the cutaneous reactions at the treated sites. Areas of untreated skin were then painted with the various dilutions of ivy in acetone and the sites liberally covered

4. Shelmire, Bedford: Contact Dermatitis from Weeds: Patch Testing with Their Oleoresins, J. A. M. A. **113**: 1085 (Sept. 16) 1939.

with the various ointments and creams. The protective coverings did not lessen the cutaneous reactions, as vesiculation occurred at all the tested sites.

Areas of skin were similarly smeared with the five protective ointments. One-half hour later 1 drop of a mixture of poison ivy oleoresin diluted one thousand times with corn oil was placed on the treated areas with a medicine dropper and the sites were covered for twenty-four hours with gauze dressings. Erythema, swelling and vesiculation occurred at the tested sites. These reactions were but slightly less than those evoked on untreated areas of skin with the same dilutions of the ivy oleoresin in corn oil. These tests were repeated six times with similar results on one person, the thighs, abdomen, chest and back being used for test sites.

Clinical ivy dermatitis is usually acquired either by direct contact with the sap which exudes from the injured vascular bundles of the ivy leaves and broken leaf petioles or indirectly from contact with sap contaminated objects as fingers, tools or clothing. Extremely sensitive persons can handle the uninjured ivy plant with absolute impunity.[5]

Separate areas of the skin of the back, legs and forearms of ivy sensitive persons were smeared with 10 per cent sodium perborate, 10 per cent calamine and 10 per cent zinc oxide in vanishing cream. After allowing for evaporation of the water in the creams, the treated areas were stroked with the broken ends of ivy leaf petioles. In all instances a vesicular dermatitis resulted from this massive exposure.

Control and similarly treated areas were then gently stroked with a crushed ivy leaf or rubbed with my contaminated fingers. Reactions at the sites covered with the perborate creams were only slightly less than those evoked on untreated areas of skin. Reactions over sites treated with the inert calamine and zinc oxide creams were frequently more reduced. The calamine and zinc oxide treated areas left a more adherent, powdery film than did the sites smeared with the perborate cream.

Difficulty was experienced in obtaining a perborate cream which would adhere to the skin. Within ten or fifteen minutes after application of the cream the powdery film would flake off the treated site. With some creams the flaky, powdery residue could be blown off with the breath. Almost the entire film would brush off with one stroke of the hand. Ten per cent perborate powder in vanishing cream was then purchased at five different drug stores. Portions of these creams were liberally smeared on the arms of four children. One-half hour after resuming ordinary play, only a trace of the protective films remained at the treated sites.

CONCLUSION

Ten per cent perborate ointment offers little protection against poison ivy dermatitis. The amount of protection afforded seems directly proportionate to the thickness of the powdery film left after evaporation of the water of the vanishing cream. That this partial protection is entirely mechanical and not due to detoxification of the oil by the perborate is indicated by the fact that the oleoresin of poison ivy deteriorates slowly, if at all, in the presence of liberal amounts of free oxygen and because of the fact that inert zinc oxide or calamine in vanishing cream affords equal protection against ivy dermatitis.

1719 Pacific Avenue.

5. Shelmire, Bedford: Cutaneous Reactions Observed During Oral Poison Ivy Therapy, J. Allergy, to be published.

SULFAPYRIDINE AND SULFATHIAZOLE THERAPY IN PNEUMOCOCCIC PNEUMONIA

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In an attempt to evaluate the comparative therapeutic effectiveness and toxicity of sulfapyridine and sulfathiazole, pneumonia patients admitted to the medical services[1] at the Philadelphia General Hospital were divided into therapeutic groups so that approximately an equal number received sulfapyridine and sulfathiazole.[2] This report deals with the study of 400 adult patients, the first 200 consecutively typed pneumococcic pneumonia patients from each therapeutic group. Included in this group of 400 patients are 200 who formed the basis of a previous report.[3] A representative group of patients (50 treated with sulfapyridine and 56 with sulfathiazole) was studied in somewhat greater detail by laboratory methods. Our purpose in this paper is to compare the behavior and activity of the two drugs when employed in the treatment of pneumonia.

ROUTINE MANAGEMENT

As soon as the clinical diagnosis of pneumonia was established and specimens for routine laboratory studies (blood, urine and sputum) were collected, chemotherapy was begun. An initial dose of 3 Gm. of either drug by mouth was followed by 1 Gm. of the drug every four hours—unless severe signs of toxicity developed—until the temperature remained normal for forty-eight hours and the patient showed evidence of clinical improvement. The initial 3 Gm. dose was repeated in four hours in the sulfathiazole scheme of dosage in order to compensate in part for the more rapid excretion of the drug. In general, the total dosage of either drug was from 25 to 35 Gm. In certain instances, when a rapid elevation of the blood level was desired, a 5 per cent solution of sulfapyridine sodium or sulfathiazole sodium (0.06 Gm. per kilogram of body weight) in sterile distilled water was given intravenously as a supplement to oral therapy. Patients in both therapeutic groups received either sodium bicarbonate or sodium citrate in amounts equal to that of the drug. The purpose of alkali administration was to aid in maintaining solubility of excreted drug by keeping the reaction of urine near neutral. All patients were given at

From the Committee for the Study of Pneumonia, Philadelphia General Hospital.

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Owing to lack of space, this article has been abbreviated in THE JOURNAL by omission of tables and a chart. The complete article appears in the authors' reprints.

Dr. Walter J. Crocker, chief of the Division of Clinical Pathology of the Laboratories of the Philadelphia General Hospital, cooperated with the authors in this work, and technical assistance was given by Miss Shlomith Bethlahmy and Miss Beatrice Doak, who were detailed for this and related studies on pneumonia by the Pennsylvania State Department of Health, Division of Pneumonia Control.

1. Clinical facilities were given us for this study by the following chiefs of service: Drs. R. S. Boles, H. D. Jump, Thomas Klein, D. W. Kramer, S. A. Loewenberg, the late David Riesman, W. E. Robertson, H. W. Schaffer, T. G. Schnabel and the late R. G. Torrey.

2. Dr. George A. Harrop, Squibb Institute for Medical Research, New Brunswick, N. J., supplied the sulfathiazole used in this study.

3. Flippin, H. F.; Schwartz, Leon, and Rose, S. B.: The Comparative Effectiveness and Toxicity of Sulfathiazole and Sulfapyridine in Pneumococcic Pneumonia, Ann. Int. Med. 13: 2038 (May) 1940.

least 2,500 cc. of fluid during each twenty-four hour period. When sulfathiazole or sulfapyridine had apparently failed to bring about a favorable clinical response within from thirty-six to forty-eight hours, the patient was usually given specific serum.

THERAPEUTIC RESULTS: MORTALITY

In this report we have included all patients with a diagnosis of pneumococcic pneumonia who received drug therapy. In general, the sex, race, age and day of disease on which treatment was begun were comparable in the two groups. Our results show no significant difference in mortality between the two drugs (table 1).

In addition to chemotherapy, type-specific serum was given to 37 patients. Of the 21 patients who received both sulfapyridine and serum 7 died, and of the 16 patients who received sulfathiazole and serum 6 died. This group of 37 patients includes 17 with bacteremia (11 sulfapyridine, 6 sulfathiazole) with 10 deaths (7 sulfapyridine, 3 sulfathiazole). It is our impression that the administration of serum was a deciding factor in the recovery of several patients in this combined therapy group (chart 3).

TABLE 1.—*Distribution of Types, Bacteremia and Mortality Rates*

	Sulfapyridine Treated (200 Cases)				Sulfathiazole Treated (200 Cases)			
	All Cases		Bacteremic Cases		All Cases		Bacteremic Cases	
Type	Number	Died	Number	Died	Number	Died	Number	Died
I	41	5	6	..	40	2	8	1
II	11	2	1	1	7	1	1	1
III	34	9	4	4	28	8	6	4
IV	10	1	1	1	16	1	3	1
V	16	1	1	1	17	..	4	..
VI	5	1	..	..	7	2	1	..
VII	17	3	5	3	18	..	1	..
VIII	15	1	1	..	14	2	1	..
IX	2	1	..	..	1	..	..	..
X	4	..	..	..	2	..	..	..
XI	..	..	..	..	1	1	..	..
XII	5	1	1	1	1	..	1	..
XIII	1	..	..	..	1	..	..	..
XIV	6	1	1	1	9	1	2	..
XV	3	1	..	..	2	..	..	..
XVI	2	..	..	..	3	..	..	..
XVII	3	1	..	..	3	1	..	..
XVIII	5	..	..	..	4	1	1	1
XIX	3	..	..	..	5	..	..	..
XX	6	1	..	..	1	..	..	..
XXII	2	..	1	..	1	..	..	..
XXIII	3	1	1	1	1	1	1	1
XXIV	1	..	..	..	..	..	..	..
XXV	3	..	1	..	5	1	1	1
XXVII	..	..	..	..	1	..	..	..
XXVIII	1	..	..	..	1	..	..	..
XXIX	1	..	..	..	..	..	..	..
XXXI	..	..	..	..	1	..	..	..
Total	200	30	24	13	200	22	31	10
Mortality per cent		15.0		54.2		11.0		32.3
Corrected mortality per cent *		11.9		45.0		7.8		22.2

* Does not include 14 patients (7 sulfapyridine, 7 sulfathiazole) who died in less than twenty-four hours after admission; 8 of these had bacteremia (4 sulfapyridine, 4 sulfathiazole).

ANALYSIS OF DEATHS

Of the 52 patients who died, 14 (7 sulfapyridine, 7 sulfathiazole) died within twenty-four hours after admission. Of the remainder, 16 (10 sulfapyridine, 6 sulfathiazole) had advanced cardiovascular disease. Individual cases of active pulmonary tuberculosis and of uremia on admission were encountered in each therapeutic group. In addition, 2 sulfapyridine treated patients had delirium tremens, 1 having been admitted with a broken arm and a fractured skull. One sulfapyridine treated patient was proved by autopsy to have had a bronchogenic carcinoma and in the sulfathiazole series there were patients with cerebral hemorrhage, severe diabetes mellitus and pneumonia associated with an acute surgical condition.

TABLE 2.—*Effect of Treatment on Temperature and Hospital Stay*

	Sulfapyridine Treated (170 Cases)			Sulfathiazole Treated (178 Cases)		
	Number	Per Cent		Number	Per Cent	
Critical fall in temperature *						
Within 24 hours	114	67.1	92.6	90	50.6	88.8
Within 48 hours	45	26.5		68	38.2	
Within 72 hours	6	3.5		12	6.7	
Over 72 hours	5	2.9		8	4.5	
Temperature at normal level *						
Within 24 hours	44	25.9	71.1	18	10.0	51.6
Within 48 hours	82	48.2		74	41.6	
Within 72 hours	20	11.8		38	21.4	
Over 72 hours	24	14.1		48	27.0	
Secondary rise in temperature (above 99 F.)*	27	15.9		17	9.0	
Average stay in hospital †	13.62 days			13.63 days		

* All deaths excluded.

† Not included in this group are all deaths and patients kept in the hospital for further study and treatment of accompanying conditions.

INFLUENCE OF TREATMENT ON THE COURSE OF THE DISEASE

The most striking clinical observation was the frequency with which the initiation of drug therapy was followed within from twenty-four to forty-eight hours by a critical drop in temperature. It is apparent that the action of sulfapyridine in lowering the temperature was more rapid than that of sulfathiazole (table 2). However, a secondary rise in temperature occurred in 44 cases (27 sulfapyridine, 17 sulfathiazole), and these usually required further drug therapy. Since chemotherapy was continued until clinical improvement was definitely established, it is noteworthy that its average duration was practically the same, four and four-tenths and four and six-tenths days respectively for groups of patients receiving sulfapyridine and sulfathiazole. The average number of hospital days for patients in the two therapeutic groups also was the same, thirteen and four-tenths days. In estimating the average number

TABLE 3.—*Incidence of Toxic Reactions (400 Cases)*

Toxic Reactions	Sulfapyridine Incidence, per Cent	Sulfathiazole Incidence, per Cent
Nausea	84.0	26.0
Vomiting *		
Mild	12.0	14.0
Moderate	44.0	7.5
Severe	4.0	0.5
Total	60.0	22.0
Hematuria		
Microscopic	10.0	10.0
Gross	1.0	0.0
Total	11.0	10.0
Dermatitis	1.5	2.5
Conjunctivitis	0.0	0.5
Drug fever †	4.5	2.5
Psychosis †	8.0	4.5
Leukopenia (below 5,000 W.B.C.)	5.0	3.0
Pain in loin	1.0	...
Renal calculi	...	0.5

* Mild, less than three times; moderate, three or more times; severe, necessitated stopping drug.

of hospital days, we have excluded all patients who died or who remained in the hospital because of conditions other than pneumonia.

COMPLICATIONS

The incidence of complications was low and comparable in the two therapeutic groups. Empyema developed in 5 patients (3 sulfapyridine, 2 sulfathiazole) with 1 in each therapeutic group dying. Two patients, 1 in each group, contracted endocarditis and died. Massive pleural effusion occurred in 15 cases (7 sulfapyridine, 8 sulfathiazole). Phlebitis developed in 1 patient in the sulfapyridine series, and individual patients with metastatic abscess and otitis media were observed in the sulfathiazole-treated group.

TOXIC REACTIONS

The most frequent toxic effects of both drugs were nausea and vomiting (table 3). Both symptoms appeared usually during the first twenty-four hours of drug therapy. The vomiting associated with sulfapyridine therapy was greater in frequency (60 per cent) and severity than that accompanying sulfathiazole treatment (22 per cent), a highly significant difference. Also, the severe nausea which frequently accompanied sulfapyridine medication (84 per cent) was milder and

TABLE 6.—*Temperature Response at Various Concentrations of Sulfapyridine and Sulfathiazole in Blood*

Concentration of Free Drug, Mg. per 100 Cc.	Sulfapyridine				Sulfathiazole			
	Days of Treatment Preceding Return to Normal Temperature							
	0-2	2-4	4-6	Over 6	0-2	2-4	4-6	Over 6
0 - 2	1	..	..	..	..	..	..	..
2.1 - 4	5	..	1	..	11	..	1	..
4.1 - 6	8	2	..	1	10	7	3	2
6.1 - 8	11	..	..	..	5	4	..	..
8.1 -10	11	1	..	..	..	1	..	1
10.1 -15	2	1	..	..	1	1	..	1
	Days of Treatment Preceding Critical Fall in Temperature							
0 - 2	1	..	..	..	..	..	..	..
2.1 - 4	6	..	..	..	11	..	..	..
4.1 - 6	12	..	..	..	16	1	..	..
6.1 - 8	17	..	..	..	13	..	..	..
8.1 -10	5	..	..	..	4	1	..	..
10.1 -15	3	..	..	..	2	..	..	..

comparatively infrequent in those patients receiving sulfathiazole (26 per cent) and was seldom experienced between attacks of vomiting. It was necessary to discontinue treatment of 8 patients receiving sulfapyridine because of severe vomiting as compared with only 1 patient receiving sulfathiazole. It is noteworthy that of those who vomited, four fifths of the sulfapyridine-treated patients and only two fifths of those treated with sulfathiazole vomited more than once or twice.

Toxic effects involving the urinary tract have presented disturbing features of therapy with both drugs. Microscopic hematuria was encountered in 10 per cent of the cases in both therapeutic groups. Gross hematuria was observed in 2 cases in the sulfapyridine group; pain in the loin, probably ureteral in origin, was also present in 2 cases in this group. In 1 this was associated with gross hematuria. After treatment with sulfapyridine or sulfathiazole, crystals presumably of the drugs or of derivatives occasionally have been observed in the urine. In a case of endocarditis terminating fatally, crystals of acetylsulfathiazole in the pelves and tubules of both kidneys were found at autopsy. Despite these renal complications acute nephritis accompanying pneumonia is not necessarily a contraindication for drug therapy (chart 1).

Blood urea nitrogen (chart 6) showed no distinct trend during chemotherapy and no significant difference between sulfathiazole and sulfapyridine. Likewise, no difference in incidence or trend of oliguria was seen (chart 6). Hyposthenuria was observed with greater

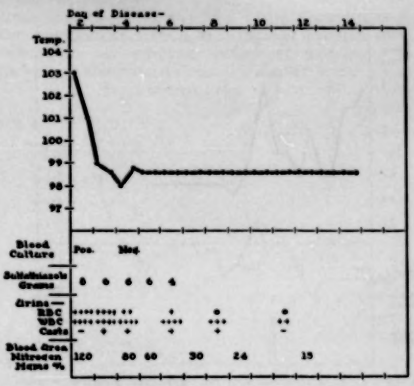

Chart 1 (A. M., a white youth aged 15).—Type VI pneumococcic pneumonia with acute nephritis and bacteremia on admission.

frequency in cases in the sulfathiazole group, but this finding is offset by its higher incidence in this group when therapy was started (chart 6).

Dermatitis, apparently caused by the administration of these drugs, was noted in 3 cases (2 maculopapular and 1 urticarial) in the sulfapyridine group and in 5 cases (3 maculopapular and 2 urticarial) in the sulfathiazole group. One patient treated with sulfathiazole showed mild conjunctivitis associated with a drug rash (purplish red subcutaneous nodules) and joint pain.

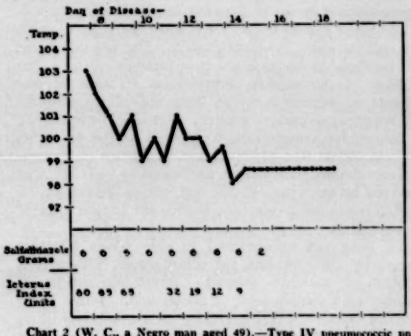

Chart 2 (W. C., a Negro man aged 49).—Type IV pneumococcic pneumonia with acute hepatitis on admission.

This complication appeared to be similar to lesions described by Haviland and Long.[4]

The question of drug fever is difficult to evaluate in pneumonia patients, although 14 patients (9 sulfa-

4. Haviland, J. W., and Long, P. H.: Skin, Conjunctival and Scleral Reactions in the Course of Therapy with Sulfathiazole, Bull. Johns Hopkins Hosp. 66: 313 (May) 1940.

pyridine, 5 sulfathiazole) apparently showed this condition. Also, psychosis is difficult to attribute to the use of chemical agents in an acutely febrile disease such as pneumonia. However, we have encountered 25 patients (16 sulfapyridine, 9 sulfathiazole) whose symptoms may have been due to the drug.

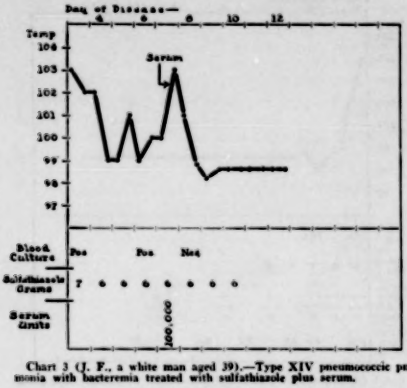

Chart 3 (J. F., a white man aged 39).—Type XIV pneumococcic pneumonia with bacteremia treated with sulfathiazole plus serum.

Repeated blood studies showed little evidence of a marked reduction in hemoglobin, red blood cell or white blood cell count that could be attributed to either drug. There were no cases of hemolytic anemia or agranulocytosis in either group, although a relative granulopenia (less than 50 per cent polymorphonuclear cells) was encountered in 3 cases in the sulfapyridine group and in 2 in the sulfathiazole group. In the majority of cases the white blood cell count tended to drop during the first forty-eight hours, coincident with the drop in temperature in both groups. Average white blood cell counts at the beginning and end of therapy made on a representative group of patients are shown in chart 6. White blood counts below 5,000 were noted in 16 cases (10 sulfapyridine, 6 sulfathiazole). The red cell count and hemoglobin likewise fell in a number of cases, but in view of the marked dehydration of most of our patients on admission it has been difficult to evaluate this apparent secondary anemia. Actually, little change in hemoglobin concentration occurred in the group as a whole (chart 6); however, some evidence of a negative correlation (correlation coefficient — — 0.31) was observed between hemoglobin and free sulfathiazole. A similar relationship was not significant in the case of sulfapyridine.

We have not encountered in this series hepatitis caused by sulfapyridine or sulfathiazole, although a number of patients showed clinical or subclinical jaundice as a complication of pneumonia. While jaundice has been regarded by many as a contraindication to therapy with sulfapyridine, our experience with jaundice due to pneumonia does not support this view. Daily measurement of the icteric index of 50 patients treated with sulfapyridine and 56 treated with sulfathiazole gave average values of 10 or higher in 9 and 13 patients respectively. The mortality, temperature response or toxic manifestations of these patients did not differ from other patients suffering with pneumonia. Chart 6 shows that during the course of the illness there was a tendency for the icteric index first to rise and then to fall to less than the initial value. The decrease occurred before drug treatment was terminated. Chart 2 shows the response to sulfathiazole administration of a patient with clinical jaundice accompanying pneumonia.

CORRELATION BETWEEN BLOOD LEVELS AND CLINICAL MANIFESTATIONS

As already stated, a group of 106 patients (50 sulfapyridine, 56 sulfathiazole) has been studied in greater detail by laboratory methods. Conclusions concerning the influence of variations in the concentration of either drug in the blood are based on this group. The concentrations of free and conjugated drug in the blood, blood urea nitrogen, hemoglobin and icteric index were determined daily. Blood was collected between 10 and 11 a. m., from one to two hours after the previous dose of drug had been given. The results are summarized in tables 4 and 5 in the form of mean values. Concentrations of the drug fluctuated from day to day in individuals but in the absence of renal involvement tended to conform to a norm characteristic for that individual. Methods employed were those listed in an earlier paper,[5] except that the method of Bratton and Marshall [6] was employed for sulfapyridine and sulfathiazole determinations. Recovery of sulfathiazole added to blood has ranged between 90 and 100 per cent, and the method has proved to be satisfactory and reliable for determination of this substance in both free and acetylated form.

BLOOD CONCENTRATION OF SULFAPYRIDINE AND SULFATHIAZOLE

Patients receiving sulfapyridine showed appreciably higher concentrations of both free and acetylated drug

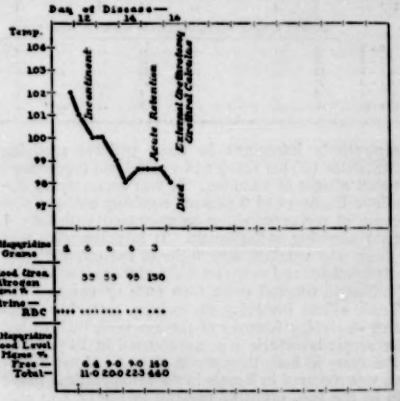

Chart 4 (H. F., a Negro man aged 49).—Type VI pneumococcic pneumonia with obstructive uropathy.

in blood than did patients receiving equivalent amounts of sulfathiazole. The average concentration of free sulfapyridine as shown by daily determinations during

5. Reinhold, J. G.; Flippin, H. F., and Schwartz, Leon: Observations on the Pharmacology and Toxicology of Sulfathiazole in Man, Am. J. M. Sc. 199: 393 (March) 1940.

6. Bratton, A. C., and Marshall, E. K., Jr.: A New Coupling Reagent for Sulfanilamide Determination, J. Biol. Chem. 128: 537 (May) 1939.

the entire period of treatment was 8.20 mg. per hundred cubic centimeters with a standard deviation of ± 3.22, compared with an average concentration of free sulfathiazole of 5.56 mg. per hundred cubic centimeters with a standard deviation of ± 2.95.

Studies of the behavior of sulfathiazole fed to mice and monkeys [7] suggested that the drug was conjugated with the acetyl radical to a lesser degree than sulfapyridine. Long [8] stated that this was true also in man. In an earlier paper [8] we were unable to arrive at a definite conclusion concerning the differences in conjugation between the two drugs. The question has been reexamined in the course of the present study. Under identical conditions, patients receiving sulfapyridine showed an average concentration of 3.95 mg. per hundred cubic centimeters of acetylsulfapyridine with a standard deviation of ± 2.14, while those receiving sulfathiazole showed 2.41 mg. per hundred cubic centimeters of acetylsulfathiazole with a standard deviation of ± 2.05. The average proportion of total drug acetylated was almost identical, 32.5 per cent of sulfapyridine and 30.3 per cent of sulfathiazole. Because of the possibility that impaired renal function was influencing the extent of acetylation and observing a more characteristic relationship, a similar comparison was made in which only those patients showing no evidence of kidney damage were represented. The average proportion of drug acetylated differed little from that in the entire series, 30.4 per cent of sulfapyridine and 26.2 per cent of sulfathiazole being present as acetyl compounds in groups of 24 and 21 patients respectively.

An important difference between the two drugs is that concentration of acetylsulfathiazole is closely related to that of free sulfathiazole (coefficient of correlation = 0.56), whereas no relationship is demonstrated between free and acetylsulfapyridine (coefficient of correlation = 0.14). Administration of sulfapyridine over a period of several days often led to a moderate increase in concentration of acetylsulfapyridine in blood (chart 7). Under similar circumstances the concentration of acetylsulfathiazole tended to decrease slightly. Substitution of sodium citrate for sodium bicarbonate as a source of alkali was without influence on acetylation.

Both drugs showed correlation of a highly significant degree between blood urea nitrogen and acetylsulfapyridine and acetylsulfathiazole (coefficients of correlation = 0.69 and 0.81 respectively). Correlation between free sulfathiazole and blood urea nitrogen was less evident, whereas no relationship between urea nitrogen and free sulfapyridine was demonstrated. Accumulation in the blood of free and acetylated fractions of both sulfapyridine and sulfathiazole as an accompaniment of impaired kidney function is clearly illustrated by the record of a patient suffering from chronic nephritis (chart 5). Likewise, inability to maintain an adequate output of urine (chart 4) was accompanied often by a rise in drug concentration. Stewart, Rourke and Allen [9] have demonstrated that the liver is the site of acetylation, although we have found little evidence of diminished conjugation in patients with increased serum bilirubin. Presumably impairment of liver function was not sufficiently severe to cause measurable changes.

7. Van Dyke, H. B.; Greep, R. O.; Rake, Geoffrey, and McKee, Clara M.: Observations on the Pharmacology of Sulfathiazole and Sulfapyridine, Proc. Soc. Exper. Biol. & Med. 42: 410 (Nov.) 1939.

8. Long, P. H.: Sulfathiazole; Preliminary Report of Council on Pharmacy and Chemistry, J. A. M. A. 114: 870 (March) 1940.

9. Stewart, J. D.; Rourke, G. Margaret, and Allen, J. G.: Acetylation of Sulfanilamide, Surgery 5: 232 (Feb.) 1939.

RELATIONSHIP OF BLOOD LEVEL TO THERAPEUTIC RESPONSE

The optimal blood concentration for the treatment of pneumonia has not been established conclusively. In an earlier paper we [10] observed a satisfactory therapeutic response over a wide range of blood sulfapyridine concentrations. Long and Bliss [11] have advocated blood concentrations of from 4 to 6 mg. per hundred cubic centimeters for effective therapy of moderately ill patients, although recommending higher levels (from 7 to 10 mg. per hundred cubic centimeters) in cases

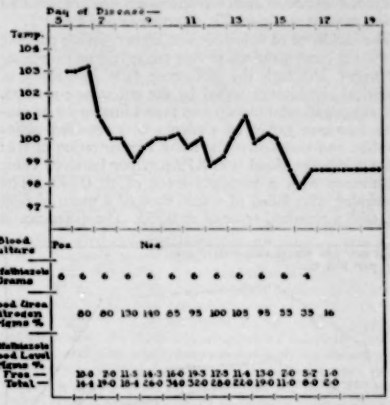

Chart 5 (L. S., a Negro man aged 50).—Type IV pneumococcic pneumonia with chronic nephritis and bacteremia on admission.

of severe involvement. Abernethy, Dowling and Hartman [12] have stated that a mean concentration of 6 mg. per hundred cubic centimeters or higher in the blood is desirable.

In order to evaluate the influence of drug concentration on therapeutic response, an attempt has been made to correlate the blood levels with the number of patients showing a critical drop in temperature within forty-eight hours of treatment (table 6). A similar tabulation has been made, based on a return to the normal temperature. For this purpose the concentrations of free drug found in the blood during the days preceding temperature response were averaged. Satisfactory response, judged by a critical fall, occurred at sulfapyridine and sulfathiazole concentrations ranging from less than 2 mg. to 15 mg. per hundred cubic centimeters.

When return to normal temperature was the basis for measurement, the difference between the response of patients with sulfapyridine concentrations below 6 mg. and that of those exceeding 6 mg. per hundred cubic centimeters was not significant when tested by the chi square method (Yates modification).[13] Similarly, the

10. Flippin, H. F.; Lockwood, J. S.; Pepper, D. S., and Schwartz, Leon: The Treatment of Pneumococcic Pneumonia with Sulfapyridine, J. A. M. A. 112: 529 (Feb. 11) 1939.

11. Long, P. H., and Bliss, Eleanor A.: Clinical and Experimental Use of Sulfanilamide, Sulfapyridine and Allied Compounds, New York, Macmillan Company, 1939.

12. Abernethy, T. J.; Dowling, H. F., and Hartman, C. R.: The Treatment of Lobar Pneumonia with Sulfapyridine and Sodium Sulfapyridine with Observations on Effective Blood Levels, Ann. Int. Med. 13: 1121 (Jan.) 1940.

13. Statistical Methods for Research Workers, Edinburgh, R. A. Fisher, 1936.

data in table 6 fails to show any statistically significant difference between lower and higher concentrations of sulfathiazole in inducing the return of the temperature to normal when tested by the chi square method.

RELATION OF BLOOD LEVEL TO TOXIC REACTIONS

A second consideration in establishing optimal concentrations in blood of chemotherapeutic agents is the influence of concentration on toxicity. Brown, Thornton and Wilson [14] have observed a higher incidence of toxic effects when large amounts of drug were given and when high concentrations of drug occurred in blood. Distinct evidence of such a relationship was encountered in the present study and is given in tables 4 and 5.

The incidence of vomiting was higher among patients exhibiting concentrations of free sulfapyridine exceeding the mean, although the difference falls just short of statistical significance tested by the chi square method. The suggested relationship was tested further by assembling into one group all patients who received sulfapyridine and vomited. The mean concentration of free sulfapyridine in blood was 8.79 mg. per hundred cubic centimeters with a standard error of ± 0.546. The remainder, who failed to vomit, showed a mean of 6.96 mg. with a standard error of ± 0.755. The difference is

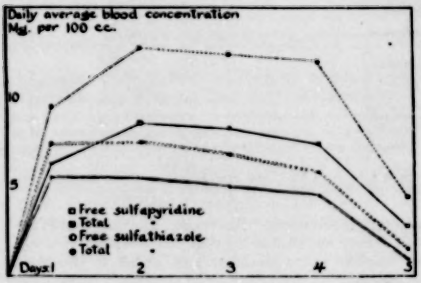

Chart 7.—Effect of oral administration of sulfathiazole (21 cases) and sulfapyridine (24 cases) for four successive days.

significant and provides evidence that higher concentrations of sulfapyridine may be a factor in vomiting. A similar relationship was less clearly demonstrated for sulfathiazole. Again, vomiting was more frequent to an extent statistically significant in patients with concentrations of sulfathiazole in blood exceeding the mean for the entire group; however, calculation of the mean concentration of sulfathiazole of those patients who vomited gave a figure that was not significantly higher than that of those who did not vomit.

Nitrogen retention (blood urea nitrogen exceeding 20) was usually accompanied by high levels of free and total sulfapyridine. While a similar association was seen less frequently for free or total sulfathiazole, the close correlation between blood urea nitrogen and concentration of acetylsulfapyridine and of acetylsulfathiazole already has been mentioned. Obviously, it is not permissible to conclude that high drug concentrations have induced nitrogen retention in these cases, although the possibility exists. The more plausible explanation is that deficient kidney function prevents rapid excretion of the drug.

A highly significant finding is the association of hematuria, either gross or microscopic, with high concentrations of acetylsulfapyridine in blood of 6 of 7 patients (chi square tested by Yates modification). The mean concentration of acetylsulfapyridine in blood of patients showing hematuria also differed from the mean of the remainder of the patients to an extent that is statistically significant. Renal or ureteral irritation caused by crystals or calculi composed of acetylsulfapyridine could explain the hematuria. Remission of hematuria and recovery occurred in all. In the sulfathiazole series the distribution of results also suggested a similar relationship between high levels of acetylated drug and hematuria. However, this was not statistically significant when tested by the chi square method, nor did the mean figures show a significant difference.

COMMENT

In our experience thus far, sulfapyridine and sulfathiazole both appeared to be effective therapeutic agents in the treatment of pneumococcic pneumonia as based on final mortality. Clinical response, as evidenced by a fall in temperature, was somewhat more striking with sulfapyridine than with sulfathiazole, although this apparent advantage had no effect on the incidence of complications and on the duration of hospitalization. Moreover, the striking frequency with which the institution of sulfapyridine therapy is followed by a critical drop in temperature within twenty-four hours may not be entirely advantageous in the light of studies in vitro [15] showing accelerated bacteriostatic effectiveness of sulfanilamide and sulfapyridine with an increase in temperature.

In general, the more severe toxic reactions, such as serious renal involvement, blood dyscrasias and dermatitis, have been infrequent and comparable in both therapeutic groups. The hazard of severe toxic reactions increases with the prolonged use of these drugs and their use in cases of chronic organic disease complicating the acute infectious process. In the treatment of pneumonia most patients required no more than from 25 to 35 Gm. of either drug extending over a period approximating five days. We believe that this explains in part the low incidence of serious toxicity. Adequate fluid intake and the administration of alkalis are important adjuvants. It appears desirable, in order to facilitate excretion of these compounds by the kidneys, to maintain a urinary output in excess of 1,000 cc. daily.

A most troublesome and often distressing toxic effect of both sulfapyridine and sulfathiazole has been nausea and vomiting. However, vomiting has been definitely less frequent and severe in the patients treated with sulfathiazole. From the clinical point of view, this advantage is of decided importance in the management of pneumonia patients.

Administration of comparable amounts of sulfapyridine and sulfathiazole to patients suffering from pneumonia establishes appreciably higher concentrations of sulfapyridine in the blood, in part because of the more rapid rate of excretion of sulfathiazole by the kidney but mainly because sulfathiazole enters the red blood cells much less readily than does sulfapyridine.

Our data fail to demonstrate a relationship between therapeutic effectiveness and the concentration of either sulfapyridine or sulfathiazole in blood of between 2 and 15 mg. per hundred cubic centimeters. It appears that

14. Brown, W. H.; Thornton, W. B., and Wilson, J. G.: An Evaluation of the Clinical Toxicity of Sulfanilamide and Sulfapyridine, J. A. M. A. 114: 1605 (April 27) 1940.

15. White, H. J.: Relationship Between Temperature and Streptococcidal Activity of Sulfanilamide and Sulfapyridine in Vitro, J. Bact. 38: 549 (Nov.) 1939.

therapeutic action is not enhanced by establishing concentrations of the free form of either drug exceeding 5 mg. per hundred cubic centimeters. Certain toxic manifestations occur with greater frequency as the concentration of the drug in blood increases. Thus vomiting is more prevalent at higher concentrations of either sulfapyridine or sulfathiazole. Also, high concentrations of acetylsulfapyridine in blood appear to be associated with hematuria. Therefore it should be possible to diminish the occurrence and severity of certain untoward effects by avoiding blood levels in excess of 5 mg. per hundred cubic centimeters. This conclusion applies especially to sulfathiazole, where a close dependence of acetylation on concentration of the drug in blood offers some possibility of control of the quantity of the acetylated fraction. As it is principally acetylsulfathiazole or acetylsulfapyridine that forms concretions in the urinary tract, the advantage of decreasing the amounts of the conjugated drugs requiring excretion is obvious. The greater frequency with which certain toxic effects are manifested by sulfapyridine as compared with sulfathiazole may be due in part to the higher concentration regularly attained by the former. Our results suggest that dosage on a lower scale than that widely used at this time and employed by us in this study could be used without loss of therapeutic effectiveness in the treatment of pneumonia with sulfapyridine and that certain toxic manifestations would become less frequent if this were done. It may be possible to decrease amounts of sulfathiazole also below those employed in this study. Further studies along these lines will be required.

SUMMARY

1. Two hundred adult patients with typed pneumococcic pneumonia were treated with sulfapyridine and a comparable series of 200 patients received sulfathiazole. Mortality in the two groups showed no significant difference.

2. Sulfapyridine appears to act more rapidly than sulfathiazole, as judged by a fall in temperature; however, the duration of chemotherapy, the incidence of complications and the average hospital stay were the same for the two therapeutic groups.

3. The severity and frequency of nausea and vomiting in the sulfapyridine-treated patients were significantly greater than in the patients receiving sulfathiazole. Other toxic manifestations were infrequent and comparable in the two groups.

4. The group treated with sulfapyridine showed appreciably higher concentrations of both free and acetylated forms in blood than did the group receiving equivalent amounts of sulfathiazole.

5. The average proportion of drug acetylated was the same for the two groups, but acetylation of sulfathiazole showed a close relationship to the concentration of the free drug, whereas a similar relationship was not observed for sulfapyridine.

6. Therapeutic response showed no correlation with concentrations of either drug in blood of between 2 and 15 mg. per hundred cubic centimeters.

7. Vomiting occurred more frequently at higher concentrations of free sulfapyridine. A similar relationship was demonstrated less clearly during treatment with sulfathiazole. Evidence has been obtained of a relationship between hematuria and higher concentrations of acetylsulfapyridine and possibly of acetylsulfathiazole.

ABSTRACT OF DISCUSSION

DR. HERBERT K. ENSWORTH, New York: The favorable reception which sulfapyridine has received leaves little doubt as to its efficacy in pneumococcic infection. It has, however, certain drawbacks in the form of toxic reactions. It has been hoped that some therapeutic agent would be discovered which would embody all the advantages of sulfapyridine and none of its disadvantages. Drs. Flippin, Schwartz and Reinhold have given us a report of their experience with a new drug which it was thought might fill such a bill. The evident efficacy of sulfathiazole is in their hands of the same order as that of sulfapyridine; in fact, their mortality rates in both the nonbacteremic and the bacteremic groups favor sulfathiazole slightly. The only marked advantage of sulfathiazole appears to lie in a greatly lowered incidence of nausea and vomiting, particularly of the more severe grades. During the past winter, all the pneumonia patients admitted to one of our men's medical wards at Bellevue have received sulfathiazole, and we have been able to compare the results obtained with those secured with similar groups of pneumonia patients treated simultaneously in other wards with sulfapyridine. The results of our studies confirm in the main the results at the Philadelphia General Hospital. A few of our patients have seemed to have a less dramatic fall in temperature, although their more generally favorable condition as regards the gastrointestinal tract has at least partially compensated for this. We likewise have not been able to correlate clinical response with the level of either drug in the blood. We have not thought it necessary to give more than 1 Gm. as a second dose; we have used 2 Gm. of sulfapyridine and either 2 or 3 Gm. of sulfathiazole as an initial dose. We have tried to use the smallest amount of drug consistent with satisfactory results, and we agree that the less that can be used the lower will be the incidence of untoward and particularly the more serious untoward reactions. For the uncomplicated case which responds promptly to chemotherapy we believe 16 Gm. of either drug is usually sufficient. However, it is important to give more than this to a bacteremic patient regardless of the rapidity of response. The exact relative efficiency of the two drugs will require more time to establish.

DR. E. H. LOUGHLIN, Brooklyn: The results of therapy with sulfapyridine and sulfathiazole reveal mortality rates of 11.9 and 7.8 per cent respectively. It must be noted that there were few bacteremias, 14 and 16 per cent. Drs. Spitz, Bennett and I also found a low incidence of bacteremia throughout the pneumonia season of 1939-1940. These facts undoubtedly influenced the mortality rates. During the past year we have used sulfapyridine and sulfathiazole alone and in conjunction with serum and have obtained results comparable to those presented by Drs. Flippin, Schwartz and Reinhold. Serum alone was used in a group of cases treated during the period between December 1937 and May 1939. This series was composed of 320 patients of types I, II, V, VII, VIII and XIV pneumonia treated only with homologous refined and unconcentrated rabbit antipneumococcus serum. Rabbit antipneumococcus serum compares favorably with the chemotherapeutic agents in the treatment of these types of pneumonia. There were 126 cases of type I pneumonia and in 27.1 per cent of these bacteremia was present. The mortality rate in the cases of bacteremia was 20.6 per cent. The mortality rate was 2.2 per cent in the cases in which bacteremia was not present. There were 47 patients with type II pneumonia, 33.4 per cent of whom had bacteremia and of these 18.2 per cent died. There were no nonbacteremic deaths. In 44 cases of type V pneumonia there was a bacteremic incidence of 22.7 per cent. None of these patients died. The mortality rate of the nonbacteremic patients was 2.9 per cent. There were 46 patients with type VII pneumonia with 34.8 per cent bacteremia and of these 12.5 per cent died. None of the nonbacteremic patients died. With type VIII pneumonia there were 38 patients, 31.6 per cent of whom had bacteremia. There were no deaths. There were 19 patients with type XIV pneumonia. The bacteremic incidence was 15.8 per cent and the bacteremic mortality was 33.3 per cent. None of the nonbacteremic patients died. It is difficult to compare our results with those of Drs. Flippin, Schwartz and Reinhold, since they

included 21 patients treated with sulfapyridine and 16 patients treated with sulfathiazole for whom specific serum was used also because there had been an unsatisfactory response to the chemotherapeutic agents. There is one important comparable factor in the drug and serum treated groups—the bacteremic rates. Among the sulfapyridine treated patients the bacteremic rate was 14.2 per cent; among the sulfathiazole treated patients it was 16.2 per cent, whereas among our serum treated patients it was 27 per cent. The mortality rate of our serum treated patients, including 27 per cent with bacteremia, however, was only 4.7 per cent. This low figure undoubtedly demonstrates the efficacy of the serum. The patients in this series received serum, on an average, ninety-two hours after the onset of illness. It is significant too that the temperature of almost 65 per cent of the 303 patients who recovered by crisis fell to normal within twelve hours, while 80.6 per cent had a normal temperature within twenty-four hours and 95.4 per cent had a normal temperature at the end of forty-eight hours. These figures can be compared with those presented by the authors. In the sulfapyridine and sulfathiazole treated groups only 25 per cent and 10 per cent respectively had a normal temperature at the end of twenty-four hours. Of importance is the fact that in 79 per cent of our cases this initial projected dose was successful in producing a crisis. These time elements are of particular importance when one considers that in a critical case of pneumonia a few hours delay in supplying sufficient effective therapy will unfavorably influence the outcome.

DR. JOHN F. CASEY, Boston: The profession is indebted to Dr. Flippin and the other men who have done careful scientific work on the use of these drugs in pneumonia. I agree that sulfathiazole is much less toxic than sulfanilamide or sulfapyridine. When you are giving these drugs watch the urine carefully for gross blood. If it occurs give plenty of water and, as a rule, the blood will disappear promptly. The way to cut down the mortality of pneumonia in this country now is for the general practitioner to carry these drugs, either sulfapyridine or, I think, eventually it will be sulfathiazole, with him. If you have to wait long for typing of sputum, for roentgenograms or blood counts, you have lost valuable time. I think it is important that the drug should be given as soon as you see the patient, and in adequate dose. The first dose is important. If I give sulfathiazole I give 3 Gm. for an initial dose and keep it up with 2 Gm. every four hours. If sulfapyridine is used, I give 2 Gm. every four hours for four or five doses. As a rule in sixteen to eighteen hours with the sulfapyridine and a little longer time with the sulfathiazole one gets results.

DR. HARRISON F. FLIPPIN, Philadelphia: Whether pneumonia has been mild this winter it is difficult to say. Certainly we have not found it so at the Philadelphia General Hospital and, as pointed out, 18 per cent of our patients represent type III infections. At this time I see no apparent reason to compare the therapeutic effectiveness of serum and chemotherapy. All patients with pneumococcic pneumonia should be given sulfathiazole or sulfapyridine, unless contraindications exist, and serum is administered where indicated. In our experience serum is given, in addition to drug therapy, in about 10 per cent of cases. I would emphasize the importance of maintaining a urinary output of 1,000 cc. daily in order to facilitate the excretion of these compounds by the kidneys. Although our experience with the various chemotherapeutic agents for pneumonia is limited, it is our feeling at the present time that the drug of choice in the treatment of pneumococcic pneumonia will prove to be sulfathiazole.

Miliary Tuberculosis and Fibroid Phthisis.—Fulminating pulmonary tuberculosis, such as miliary tuberculosis, is rather infrequent among persons in better circumstances, while fibroid phthisis is more likely to occur among persons under better economic surroundings. Extremely acute manifestations of rheumatic infections are relatively infrequent among the better-to-do, while the more chronic type of fibrosing mitral stenosis is more likely to occur. In both tuberculosis and rheumatic fever these differences are conditioned by better treatment, ability to obtain more rest, less arduous occupation and other considerations.—Hedley, O. F.: *Pub. Health Rep.*, Oct. 11, 1940, p. 1858.

ARTERIAL HYPERTENSION

CORRELATION OF CLINICAL AND EXPERIMENTAL OBSERVATIONS

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AND
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Increased arterial pressure of known or suspected causation occurs in at least forty-seven syndromes, which, according to pathogenesis, are grouped as neurogenic, endocrine, cardiovascular and renal.[1] However, as a problem in clinical practice, hypertension is largely limited to those syndromes called essential and malignant hypertension. The genesis of these states, which had been regarded as renal since the time of Bright, has remained obscure since their separation from glomerulonephritis in the works of Allbutt, Janeway, Volhard, Keith and others.

The demonstration by Goldblatt[2] that lasting hypertension occurs after partial compression of one or both main renal arteries by a metal clamp revived interest in the relationship of the kidneys to increased arterial pressure. Experimental hypertension of similar nature was subsequently induced by one of us,[3] who produced fibrocollagenous perinephritis by application of silk or cellophane to the kidneys. Compression of the renal parenchyma in the scar resulted in hypertension. The experimental disease which results from either of these procedures is in most respects similar to essential and malignant hypertension in man, and, as a result, new concepts of their pathogenesis were formed. Our purpose in this report is to review the application of these concepts to the clinical problem of high blood pressure.

HUMORAL MEDIATORS

Since it forms the basis of subsequent discussion, a chemical system which links the substances that appear to be mediators of renal hypertension must first be reviewed. Briefly, renin, a protein present in the cortex of normal kidneys, although not detectable by present methods in renal venous blood of normal dogs, is liberated in increased amounts into the renal vein by the kidneys of dogs made hypertensive by renal arterial compression or by perinephritis.[4] Renin alone does not cause vasoconstriction when perfused with Ringer's solution through isolated blood vessels. However, in blood it combines, possibly enzymatically, with a substance present in normal plasma, provisionally termed renin activator.[5] The interaction of renin and renin activator liberates a third substance, angiotonin.[6] Angiotonin is a highly active vasoconstrictor distinguished from most substances which increase blood pressure in that it does not cause a decrease of cutaneous temperature during its pressor action. Given in doses which increase arterial pressure, angiotonin

Read before the Indianapolis Medical Society, Oct. 8, 1940.
From the Lilly Laboratory for Clinical Research, Indianapolis City Hospital.

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2. Goldblatt, H.; Lynch, J.; Hanzal, R. F., and Summerville, W. W.: The Production of Persistent Hypertension in Dogs, Am. J. Path. **9**: 942, 1933.
3. Page, I. H.: The Production of Persistent Arterial Hypertension by Cellophane Perinephritis, J. A. M. A. **113**: 2046 (Dec. 2) 1939.
4. Page, I. H.: Demonstration of the Liberation of Renin into the Blood Stream from Kidneys of Animals Made Hypertensive by Cellophane Perinephritis, Am. J. Physiol. **130**: 22, 1940.
5. Kohlstaedt, K. G.; Page, I. H., and Helmer, O. M.: The Activation of Renin by Blood, Am. Heart J. **19**: 1, 1940.
6. Page, I. H., and Helmer, O. M.: A Crystalline Pressor Substance (Angiotonin) Resulting from the Reaction Between Renin and Renin Activator, J. Exper. Med. **71**: 29, 1939.

causes vasoconstriction, which, in the kidney, predominates in the glomerular efferent arterioles.[7] Significantly, it also increases the force of the heart beat.[8]

Normal dogs develop tolerance to successive doses of this substance. Tolerance occurs to only a small degree when both kidneys have been removed or seriously damaged.[9] From this and other observations evidence has accumulated which indicates the presence in normal blood and normal kidneys of a substance which inhibits the action of angiotonin. Attempts to extract such an inhibitor or antipressor substance from the kidneys have been partially successful both in the hands of Grollman, Harrison and Williams[10] and in ours.[11]

CLINICAL PHYSIOLOGY

Those who have seen and felt the precordiums of patients suffering from hypertension have received the impression that the heart is laboring. The thrust and heave of the heart are obvious manifestations of increased force of its beat, just as elevation of diastolic pressure is evidence of peripheral resistance to the outflow of blood. The extent and effectiveness of cardiac augmentation in hypertension are shown in the fact that, in spite of peripheral vasoconstriction, there is no evidence of decreased peripheral blood flow. The feet and hands are warm, and there are no claudication, no cyanosis, no fainting and no renal failure until late in the course of the disease. Blood flow is maintained at efficient levels because the heart has increased its effort in propelling blood through the resistant arterial tree. Neither increased arterial pressure nor adequate peripheral blood flow can be maintained in the presence of vasoconstriction unless the heart increases the force of its beat.

The connection between peripheral vasoconstriction and cardiac augmentation is evident with a little reflection. Embryologically the heart is a specialized part of the vascular system. Therefore it is not surprising that the stimulus which increases peripheral tone should also augment cardiac effort. It is an important generalization that heart and arterial tree are not independent in hypertension; consequently, when, with the progress of the disease, increased cardiac effort may lead to premature failure, this event should be considered neither an incident nor an accident but an important phase in the natural evolution of hypertension.

Clinical observation, which has led us to a definition of the role of the heart in hypertension, also establishes the site of peripheral constriction. It is commonplace that patients suffering from this condition are not usually pale, that the color of their nail beds is good and the temperature of the skin normal. In them, vasoconstriction is not the result of closure of capillaries and, in this respect, differs from the constriction which follows injections of epinephrine or solution of posterior pituitary. Examination of the one place where small arteries and arterioles are open to inspection, the ocular fundus, shows at once that constriction has occurred in these vessels. We may therefore conclude that increased arterial pressure in hypertension is the result of a stimulus which causes constriction of small arteries and arterioles and at the same time augments the force of the heart's beat. The reader will recall that angiotonin is capable of these effects.

As the hypertensive process continues, it results in hypertrophy of arteriolar and cardiac muscle. Arteriolar and cardiac cells increase until growth begins to exceed the limits of efficient diffusion of nutriment into them, so that regressive and degenerative changes occur. These cellular changes are reflected in cardiac failure, in cerebral and retinal lesions due to sclerosis, thrombosis or rupture and in disturbances of renal and digestive functions. With the passage of time, either as the result of cardiac failure or of arterial and arteriolar disease, blood flow through vital organs decreases until death supervenes.

Malignant hypertension, which may complicate the course of essential hypertension or which may be present from the onset of increased arterial pressure, is characterized by retinal hemorrhages and papilledema, with progressive renal, cardiac or cerebral failure leading to death usually within two to three years. Pathologically, it is manifested in widespread necrosis of the cells and obliteration of the lumens of arterioles. Clinically, the necrotizing arteriolitis and intense vasoconstriction are reflected in the retina by hemorrhages and exudates; in the heart, by ominous changes of sound and rhythm (e. g. gallop rhythm) and electrocardiographic record; in the kidney, by hematuria, proteinuria and renal failure; in the brain, by confusion, headaches and seizures. It is interesting to note in this connection that fractions have been obtained in the purification of renin by Winternitz[12] which, when injected, cause arteriolar necrosis and hemorrhages similar to those of malignant hypertension.

THE KIDNEYS IN HYPERTENSION

The usual tests of renal function may show no abnormality in the earlier phases of essential and malignant hypertension. Urea clearance, which measures the rate of removal of urea from blood by the kidneys, is frequently normal. Less commonly, the capacity of the kidneys to do work as measured by the power to concentrate urine is also unchanged. These observations would lead to the conclusion that the kidneys in early hypertension are entirely normal if other methods of examination did not disclose the presence of a characteristic renal abnormality.[13] This functional disturbance may be demonstrated by the use of methods which measure separately the rate of flow of blood through the kidneys (calculated from plasma clearance of diodrast) and the rate of filtration of water from blood in the glomeruli (inulin clearance).

7. Corcoran, A. C., and Page, I. H.: The Effects of Angiotonin on Renal Blood Flow and Glomerular Filtration, Am. J. Physiol. **130**: 335, 1940. Observations have recently been reported (Corcoran, A. C.; Kohlstaedt, K. G., and Page, I. H.: Proc. Soc. Exper. Biol. & Med., to be published) on the effect of intravenous injections of solutions of angiotonin in human beings. Single injections of from 0.5 to 1 cc. of the solution caused increased systolic and diastolic pressure over a period of about eight minutes. Slow infusion of angiotonin increased arterial pressure over longer periods, greatly decreased renal blood flow and increased filtration fraction, apparently as the result of intense efferent arteriolar constriction. Neither pallor nor subjective complaints were observed during the increase of arterial pressure.

8. Andrus, E. C., and Hill, W. H. P.: Effect of Renin and Angiotonin upon Isolated Perfused Heart, Proc. Soc. Exper. Biol. & Med. **44**: 213, 1940.

9. Page, I. H., and Helmer, O. M.: Angiotonin Activator, Renin and Angiotonin Inhibitor, and the Mechanism of Angiotonin Tachyphylaxis in Normal, Hypertensive and Nephrectomized Animals, J. Exper. Med. **71**: 495, 1940.

10. Harrison, T. R.; Grollman, A., and Williams, J. R., Jr.: Humoral Agents in the Causation of Hypertension, in Blood, Heart, and Circulation, Symposium, Washington, D. C., Science Press, 1940, p. 274. Williams, J. R.; Grollman, A., and Harrison, T. R.: Renal Extract in Experimental Hypertension, Am. J. Physiol. **130**: 496, 1940.

11. Page, I. H.: Newer Aspects of Experimental Hypertension, in Blood, Heart, and Circulation, p. 239. Page, Helmer, Kohlstaedt, Fouts, Kempf and Corcoran.[9]

12. Winternitz, M. C.: Views as to Causes of Coronary Sclerosis, in Blood, Heart, and Circulation, p. 114.

13. Smith, H. W.: Studies in the Physiology of the Kidney: The Renal Blood Flow in Normal and Hypertensive Subjects, in Porter Lecture Series, Lawrence, Kan., University of Kansas, University Extension Division, 1939, no. 9.

Filtration of water and dissolved solids, such as urea and inulin, depends on the pressure exerted within the glomeruli on the blood plasma. Normally from 16 to 20 per cent of the water is filtered into the renal tubules. In hypertension more than 20, even 30 or 35 per cent, of the plasma water may be forced through the glomerular membrane.[14] This increased filtration can occur only as the result of elevated intraglomerular pressure. Since it cannot arise from increased systemic arterial pressure alone,[15] the increased intraglomerular pressure of hypertension might conceivably result from (*a*) opening arterioles proximal to the glomeruli (afferent arterioles) or (*b*) from constricting arterioles distal to the glomeruli (efferent arterioles). If the increased pressure were due to dilatation of afferent arterioles, the resistance to the flow of blood through the kidneys would be decreased, so that we would expect increased renal blood flows in hypertension. Actually, the rate of renal blood flow is decreased. The increase of intraglomerular pressure is therefore due to constriction of the efferent arterioles, which at once increases the filtration pressure and restricts the flow of blood through the kidneys. It will be recalled that this is one of the characteristic effects of angiotonin.

The maintenance of normal urea clearance in hypertension is due to this abnormality. Urea clearance is a measure of the rate at which urea is filtered from the blood into the renal tubules. With efferent arteriolar constriction less blood may pass through the glomeruli, but relatively more water and urea are filtered off. If, for example, renal blood flow in a patient suffering from hypertension has decreased 30 per cent, an increase of filtration pressure sufficient to squeeze 26 instead of 20 per cent of the plasma water and urea through the glomeruli would maintain urea clearance at a normal rate. Such a finding is not uncommon. The hypertensive patient is not therefore to be congratulated unreservedly on a normal urea clearance, since the normal finding may express intense efferent arteriolar constriction.

Renal vasoconstriction and ischemia in time result in degenerative and occlusive arteriolar changes which interfere with the normal nutrition of the renal tubules. As these die or lose their capacity to work, the kidneys are no longer able to concentrate urine by reabsorbing water from the glomerular filtrate. In its late phases this loss of renal tissue will be manifested in nocturia and polyuria. Long before the onset of these symptoms there will have occurred impairment of the maximum power of the kidneys to form urine of high specific gravity, so that the patient, when deprived of fluids for twenty-four hours, forms urine of specific gravity less than 1.028 (Addis concentration test) during the last twelve hours. The decrease of maximum concentrating power occurs in most cases months or years before urea clearance falls to abnormal values. It is the earliest clinical measure of impaired renal nutrition. Later, as arteriolar occlusion extends to wider areas, renal blood flow decreases until increased filtration pressure no longer maintains urea clearance within normal levels. The fall of urea clearance is therefore more ominous than a decrease in the maximum urinary specific gravity, and, in malignant hypertension, the progress of the disease may be gaged from the rate at which urea clearance falls.

14. Goldring, W.; Ranges, H. A.; Chasis, H., and Smith, H. W.: Effective Renal Blood Flow and Functional Excretory Mass in Essential Hypertension, J. Clin. Investigation **17**: 505, 1938.

15. Corcoran, A. C., and Page, I. H.: The Effects of Renin, Pitressin, and Pitressin and Atropine on Renal Blood Flow and Clearance, Am. J. Physiol. **126**: 354, 1939.

NERVOUS SYSTEM

The worried, tense, complaining, fretful and resistant attitude of many patients suffering from essential hypertension is known to every physician. In many cases the onset of headaches is regularly associated with emotional stress. Nearly all show exaggerated responses of mood, mental content and blood pressure to the dissonances of daily life. In some the removal of obvious sources of conflict or direction toward readjustment of interests and better understanding of themselves and the world results in recession of symptoms and a decrease of arterial pressure. Many physicians are familiar with the fall of blood pressure and general improvement which may follow a trusting change to a "new doctor" as well as the rise of pressure and return of symptoms which will occur if the patient's full confidence has not been gained. In a few cases psychoanalysis has resulted in sustained improvement, and it is interesting to note that psychologically difficult phases of the analysis were sometimes associated with exacerbations of the symptoms.[16] The important role of the mind in hypertension is therefore evident. It follows from this that such patients require the ungrudging time and emotional energy of a firm, consistent guide.

Somatic manifestations of mental origin other than increased arterial pressure may appear in hypertensive patients. Thus, a syndrome occurs, most commonly in young females, in which hypertension is associated with symptoms of cortical stimulation of the diencephalon.[17] This state, the hypertensive diencephalic syndrome, is characterized by spontaneous or easily provoked blushing (over the face and neck), crying, laughter, salivation and tachycardia. These symptoms occur with little or no change of mood or mental content. The symptom complex is easily confused with hyperthyroidism and probably accounts for some of the apparent failures of thyroidectomy. The importance of this syndrome lies in the fact that the prognosis of such patients as to both life and freedom from organic disability is good.

Evidence of participation of the nervous system in hypertension may also be drawn from the effect of extensive operations on the sympathetic nervous system (anterior nerve root sections, total splanchnic resection, bilateral removal of thoracic and lumbar sympathetic chains). These operations, but especially the more recent types of sympathectomy, result in many cases in partial disappearance of hypertension and gratifying recession of symptoms and some prolongation of life.[18]

From the experimental side, it is interesting to observe that lasting hypertension may be produced by section of the inhibitory sinoaortic nerves[19] or from the injection of kaolin into the cisterna magna[20] and

16. Alexander, F.: Psychoanalytic Study of a Case of Essential Hypertension, Psychosom. Med. **1**: 139, 1940.

17. Page, I. H.: A Syndrome Simulating Diencephalic Stimulation Occurring in Patients with Essential Hypertension, Am. J. M. Sc. **190**: 9, 1935.

18. Allen, E. V., and Adson, A. W.: Treatment of Hypertension: Medical versus Surgical, Ann. Int. Med. **14**: 288, 1940. Page, I. H., and Heuer, G. J.: The Treatment of Essential and Malignant Hypertension by Anterior Nerve Root Section, Arch. Int. Med. **59**: 245 (Feb.) 1937. Smithwick, R. H.: Surgical Intervention on Sympathetic Nervous System for Peripheral Vascular Disease, Arch. Surg. **40**: 286 (Feb.) 1940.

19. Koch, E., and Mies, H.: Chronischer arterieller Hochdruck durch experimentelle Dauerausschaltung des Blutdruckzügler, Krankheitsforschung **7**: 241, 1939. Heymans, C., and Bouckaert, J.: Observations chez le chien en hypertension artérielle chronique et expérimentale, Compt. rend. Soc. de biol. **106**: 471, 1931. Grimson, K. S.: Role of the Sympathetic Nervous System in Experimental Neurogenic Hypertension, Proc. Soc. Exper. Biol. & Med. **44**: 219, 1940.

20. Griffith, J. Q.; Jeffers, W. A., and Lindauer, M. A.: A Study of the Mechanism of Hypertension Following Intracisternal Kaolin Injection in Rats: Leukocytic Reaction and Effect of Lymphatic Absorption, Am. J. Physiol. **113**: 285, 1935.

that complete sympathectomy with cardiac denervations lowers to normal the arterial pressure of dogs with such neurogenic hypertension.[21] Equally interesting is the observation that extensive sympathectomy in dogs with renal hypertension has little immediate and no permanent effect on the level of arterial pressure.[22] This failure of response in renal hypertension in dogs as compared with the response to sympathectomy in some human beings in whom hypertension seemed in part of renal origin may be attributed to the relatively lower level of psychogenic and neurogenic influence on the reactivity of the blood vessels in dogs.

THE ENDOCRINE SYSTEM

The relation of the endocrine system to the level of arterial pressure is known to the clinician from his knowledge of hypotension in Addison's disease and of hypertension in pituitary basophilism and certain adrenal carcinomas. This association of the pituitary and adrenal glands with arterial pressure is borne out experimentally in renal hypertension.

Removal of the hypophysis, the master gland, causes partial lowering toward normal of arterial pressure in experimental renal hypertension.[23] The same is true of bilateral adrenalectomy when adequate supportive doses of adrenal cortex extract and salt are given.[24] Removal of one adrenal and demedullation of the other does not alter the level of arterial pressure. Thyroidectomy, gonadectomy and pancreatectomy are similarly without effect.[25] The action of the pituitary gland seems to be exercised through its control of the adrenal cortex.

Clinically, neither hypophysectomy nor purposeful adrenalectomy has been practiced in hypertensive man. However, administration of desoxycorticosterone to patients suffering from the functional adrenalectomy of Addison's disease may so increase the reactivity of the vascular system that blood pressure may increase to hypertensive levels.[26] Thyroidectomy and gonadectomy are apparently without effect on hypertension in human beings.

Clinical and experimental observation therefore parallel and complement each other. It may be concluded that the adrenal cortex, although it may not itself participate in the mechanism which raises arterial pressure, serves at least to maintain the vascular tree in a reactive state to the stimulus which provokes hypertension. A similar generalization may apply to the role of the nervous system.

21. Freeman, N. E.: Hypertension from Increased Intracranial Pressure, in Blood, Heart, and Circulation, p. 282.

22. Freeman, N. E., and Page, I. H.: Hypertension Produced by Constriction of the Renal Artery in Sympathectomized Dogs, Am. Heart. J. **14**:405, 1937.

23. Page, I. H., and Sweet, J. E.: Extirpation of Pituitary Gland on Arterial Blood Pressure of Dogs with Experimental Hypertension, Am. J. Physiol. **120**: 238, 1937.

24. Goldblatt, H.: Studies on Experimental Hypertension: V. The Pathogenesis of Experimental Hypertension Due to Renal Ischemia, Ann. Int. Med. **11**: 69, 1937. Page, I. H.: The Effect of Bilateral Adrenalectomy on Arterial Blood Pressure of Dogs with Experimental Hypertension, Am. J. Physiol. **122**: 352, 1938. Collins, D. A., and Wood, E. H.: Experimental Renal Hypertension and Adrenalectomy, Am. J. Physiol. **123**: 224, 1938.

25. Glenn, F., and Lasher, E. P.: Effect of Total Thyroidectomy on Production and Maintenance of Experimental Hypertension, Proc. Soc. Exper. Biol. & Med. **38**: 158, 1938. Katz, L. N.; Friedman, M.; Rodbard, S., and Weinstein, W.: Observation on the Genesis of Renal Hypertension, Am. Heart J. **17**: 334, 1939. Page.[5]

26. Ferrebee, J. W.; Ragan, C.; Atchley, D. W., and Loeb, R. F.: Desoxycorticosterone Esters: Certain Effects in the Treatment of Addison's Disease, J. A. M. A. **113**: 1725 (Nov. 4) 1939. Soffer, L. J.; Engel, F. L., and Oppenheimer, B. S.: Treatment of Addison's Disease with Desoxycorticosterone Acetate, ibid. **115**: 1860 (Nov. 30) 1940. Roth, G. M.; Robinson, F. J., and Wilder, R. M.: Changes of Systolic and Diastolic Blood Pressure and the Response of the Blood Pressure to the Cold Pressor Test in Patients with Addison's Disease—Giving Treatment with Desoxycorticosterone, Proc. Centr. Soc. Clin. Research **13**: 9, 1940.

CORRELATION WITH THE HUMORAL PRESSOR SYSTEM

The components of the humoral pressor system were reviewed at the outset of this report. Their relation to the pathogenesis of hypertension may now be filled in.

Experimentally, renal hypertension due to constriction of the main renal arteries or to compression of the renal parenchyma in the scar of perinephritis occurs in "essential" and malignant phases. In the "essential phase" systolic and diastolic pressures are elevated, and cardiac and arteriolar hypertrophy and sclerosis develop with the passage of time. It is an important observation that sclerosis does not occur in the kidneys, which are protected from the increased arterial pressure by the clamp or rigid scar. Renal function as measured from the clearances of urea, creatinine, inulin, phenol red and diodrast may remain within normal limits.[27]

Malignant hypertension in which arteriolar necrosis results in retinal hemorrhages, papilledema, exudates and detachment, cardiac irregularities, renal failure and gastrointestinal bleeding may supervene.[28]

The renin content of renal venous blood is increased in both essential and malignant phases, and the blood contains an excess of a vasoconstrictor which, like angiotonin, is inhibited by normal blood and potentiated in the presence of blood from animals previously nephrectomized.[29] When renal extracts containing the angiotonin inhibitor are given to experimentally hypertensive animals a reduction of arterial pressure usually begins within twelve to twenty-four hours of the administration of an effective dose, and the reduction of pressure may persist for several days after treatment has been discontinued.[30] The reduction of arterial pressure is associated with relaxation of the glomerular efferent arterioles and a resultant increase of renal blood flow and decrease of filtration pressure.[31]

Observations which are in many respects similar have been made in human beings. The blood of patients suffering from essential and malignant hypertension contains an excess of angiotonin-like vasoconstricting substance.[29] The renin content of renal venous blood has been measured in several instances, and it is interesting that renin was present.[4] Arterial pressure is reduced and, in malignant hypertension, life is prolonged by administration of renal extracts which contain the angiotonin inhibitor. The antipressor action of the renal extracts is associated with relaxation of the constricted glomerular efferent arterioles and a resultant restoration toward normal of renal hemodynamics.[29]

Experimental and clinical observations therefore suggest an important participation of the renal humoral pressor system in hypertension.

27. Corcoran, A. C., and Page, I. H.: Observations on the Relation of Experimental Hypertension to Renal Clearance and Renal Ischemia, Am. J. Physiol. **123**: 43, 1938.

28. Goldblatt, H., and Kahn, J. R.: Studies on Experimental Hypertension: XIII. Experimental Observations on the Malignant Phase of Essential Hypertension; The Production of Intrarenal and Extrarenal Arteriolar Necrosis and Necrotizing Arteriolitis, in Blood, Heart, and Circulation.

29. Page, I. H.: The Vasoconstrictor Action of Plasma from Hypertensive Patients and Dogs, J. Exper. Med. **72**: 301, 1940.

30. Page, I. H.; Helmer, O. M.; Kohlstaedt, K. G.; Fouts, P. J.; Kempf, G. F., and Corcoran, A. C.: Substances in Kidney and Muscle Eliciting Prolonged Reduction of Blood Pressure in Human and Experimental Hypertension, Proc. Soc. Exper. Biol. & Med. **43**: 722, 1940. Harrison, Grollman and Williams.[29] Williams, Grollman and Harrison.[29] Page.[5]

31. Corcoran, A. C., and Page, I. H.: The Effect on Renal Function of Extracts Which Lower Arterial Blood Pressure in Patients with Essential and Malignant Hypertension and in Dogs with Experimental Hypertension, Proc. Centr. Soc. Clin. Research **13**: 38, 1940.

SUMMARY

Angiotonin or renin plus activator when injected into animals produce those effects which have been shown to characterize arterial hypertension in man, namely cardiac augmentation, arteriolar constriction and constriction of the efferent arterioles of the kidneys. This suggests the possibility that angiotonin is involved in the pathogenesis of essential and malignant hypertension in man.

The endocrine system, notably the adrenal cortex and hypophysis, appear to participate indirectly in that their secretions maintain the blood vessels and heart in a state receptive to hypertensive stimuli. The nervous system may play a similar part, especially in some types of hypertension in man, in which the high state of nervous organization may even make it a prepotent factor.

The clinical picture and course of each case of hypertension is therefore probably a composite of the degree and kind of renal, endocrine and nervous participation.

CLINICAL SYMPTOMS ASSOCIATED WITH THE SO-CALLED NON-PATHOGENIC AMEBA

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It is our purpose in this paper to present our clinical observations over a period of five years on 406 patients harboring one or more of the five forms of human intestinal ameba. These patients represent a cross section of the types of cases and complaints usually encountered in a gastrointestinal clinic. They were all given antiamebic treatment and the results are here recorded. This study is also intended to emphasize:

(*a*) the lack of uniformity in the observations made by various workers [1] in this field;

(*b*) the greater incidence of all types of intestinal ameba in man than is generally recognized;

(*c*) the responsibility of protozoa other than Endamoeba histolytica for the symptoms produced;

(*d*) the advisability of classifying all forms of ameba as potential pathogens, since they probably are capable of producing, to a moderate degree, many of the same symptoms produced by E. histolytica.

(*e*) that active pseudopodial amebas, in the absence of cysts, are in the average laboratories frequently mistaken for E. histolytica [2] and treated as such, thus detracting from the importance of the other four protozoa as symptom producers (pathogens).

Surveys have shown that protozoa are the most prevalent of all human parasites. It has been estimated that more than thirty million people [3] in the United States are infected with one or more of these organisms. Of these people from 2.5 to 10 per cent harbor E. histolytica, from 15 to 31 per cent Endamoeba coli, from 10 to 37.7 per cent Endolimax nana, from 2 to 3.5 per cent Iodamoeba bütschlii and from 2 to 4 per cent Dientamoeba fragilis.[4] It has been generally accepted that only E. histolytica is pathogenic to human beings, while the other four forms of intestinal ameba are nonpathogenic. This opinion was no doubt fostered principally by the experimental work of Walker and Sellards,[5] in Manila in 1913, who reported results of feeding experiments on 40 volunteers. One half of these subjects were fed cysts of E. histolytica, and of these 18 became parasitized and in 4 diarrhea developed. The other half were fed cysts of E. coli, and of these 17 became parasitized and in none did diarrhea develop. Musgrave [6] seriously questioned the logic of the experiments and considered the results inconclusive.

Notwithstanding these experimental results in man and animals, which conclude that E. coli is not pathogenic, there have appeared in the literature records of clinical observations of symptoms caused by these organisms. In 1879 Grassi [7] reported the finding of E. coli in patients suffering from diarrhea. In 1904 and again in 1926 Musgrave [8] declared that the presence of ameba in the colon should be regarded as potentially dangerous from the clinical standpoint. In 1921 Kofoid [9] and Swezy described a new species of ameba, which they called Councilmania lafleuri, and stated that it was present in 10 per cent of all persons. They claimed that it may produce symptoms of colitis of similar character and of equal severity to that seen in any case of chronic amebiasis due to E. histolytica in the temperate zone. Furthermore, they were able to relieve patients harboring this organism with antiamebic therapy. In 1925 Hall and Reed [9] described the symptoms produced by the Councilmania type E. coli. From the results of the treatment they concluded that E. coli was potentially pathogenic.

In 1930 Lynch [10] asserted that the pathogenicity of Councilmania lafleuri was still under suspicion. Stabler proved conclusively in 1938 that Councilmania lafleuri and E. coli were identical organisms. To us these observations were of great significance, not because of the identification of the Councilmania lafleuri as one of the forms of E. coli, but because they suggested the fact that E. coli could produce symptoms. In 1926 Brown [11] described a number of cases of dysentery in which he found either E. coli or Endolimax nana. At that time he presented sound theoretical reasons for their causal relationship. Among other writers claiming that these two organisms were pathogenic to man

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1. Craig, C. F.: The Amebiasis Problem, Proc. Staff Meet. Mayo Clin. **7**: 326 (June 1) 1932. DeYoung,[20] Dobell and O'Connor,[21] Meyer and Johnstone,[15] Kellogg and Scott,[20]

2. Kantor, J. L.: Diarrhea, Am. J. Digest. Dis. & Nutrition **2**: 1 (March) 1935. Stabler, R. M.: An Extended Study of Variations in a Single Race of a Coli-like Ameba and Its Bearing on Specificity of Councilmania Lafleuri, Am. J. Hyg. **16**: 1 (July) 1932. Hegner, Robert; Johnson, C. M., and Stabler, R. M.: Host-Parasite Relations in Experimental Amebiasis in Monkeys in Panama, Am. J. Hyg. **15**: 394 (March) 1932. DeYoung,[20] Kellogg and Scott.[20]

3. Lynch, K. M.: Effects of Protozoa, Proc. Internat. Assemb. Interstate Post-Grad. M. A. North America (1928), 1929, p. 377.

4. Byrd, E. E.: On the Incidence of Intestinal Parasites in Five Hundred and Thirty-Seven Individuals on the Relief Rolls in the City of Athens, Georgia, Am. J. Trop. Med. **16**: 39 (Jan.) 1936. Hegner, Robert: Minute Animal Parasites of Man, Scient. Monthly **30**: 241 (March) 1930. Reed, A. C.: Clinical Amebiasis in Relation to Public Health, Am. J. Pub. Health **25**: 396 (April) 1935. Nauss, R. W., and Salinger, M. H.: Amebic and Other Intestinal Protozoal Infestations in Representative Groups of New York City, ibid. **25**: 7 (July) 1935. Kmecza, J. M.: The Incidence of Human Intestinal Parasite Infections Among Patients in a State Institution of Indiana, Am. J. Trop. Med. **19**: 515 (Nov.) 1939. Wenrich, Stabler and Arnett.[20]

5. Walker, E. L., and Sellards, A. W.: Experimental Entamebic Dysentery, Philippine J. Sc. **8**: 253, 1913; cited by Craig[20] pp. 8 and 181.

6. Musgrave, W. E.: Clinical Study of Amebiasis, Am. J. Trop. Med. **11**: 469 (Nov.) 1931.

7. Grassi, B., cited by Craig.[20]

8. Kofoid, C. A.: A Parasite Ameba of Human Intestines, Univ. California Publ. Zool. **20**: 169, 1921.

9. Hall, J. H., and Reed, A. C.: Endameba Coli: A Clinical Study, J. A. M. A. **84**: 1914 (June 20) 1925.

10. Lynch, K. M.: Protozoan Parasitism of the Alimentary Tract, New York, The Macmillan Company, 1930, p. 101.

11. Brown, P. W.: Nature, Incidence and Treatment of Endamebiasis, J. A. M. A. **86**: 457 (Feb. 13) 1926.

may be mentioned Orticoni and Gazzola [12] in 1922. Rankin, Bargen and Buie [13] concluded from their clinical study in 1934 that E. coli and Endolimax nana should be considered pathogenic when found in patients with gastrointestinal symptoms. Another ameba reported as capable of producing symptoms was Dientamoeba fragilis. Reports by Robertson,[14] Thomson and Robertson,[15] Hakansson [16] and Wenrich [17] also suggest its pathogenicity.

RECOGNITION OF AMEBA

For complete details on the various forms of amebas, the reader is referred to any accepted textbook on clinical parasitology. Craig and others [18] have frequently drawn attention to the fact that at the present time there are but few laboratory technicians trained in this difficult phase of parasitology. It is the opinion of most workers that the identification of the cyst yields more reliable results than identification of the trophozoite. Many laboratories employ only the wet saline smear and stain with iodine solution as the simplest and most practical method.[19] There are, however, many workers who rely entirely on the iron hematoxylin stain. It is sometimes difficult to differentiate the fresh active pseudopodial trophozoite of

TABLE 1.—*Spastic Irritable Colons Seen Through Sigmoidoscope*

Types of Ameba	Cases	Number of Spastic Colons	Per Cent
E. histolytica alone	43	21	48.8
Hist. with other amebas	52	32	61.5
Endolimax nana alone	143	63	44.0
Nana with other amebas	41	35	85.0
E. coli alone	99	36	36.3
Coli with other amebas	73	40	54.8
Iodamoeba bütschlii alone	0	0	....
Iodamoeba bütschlii with other amebas	8	1	25.0
Dientamoeba fragilis alone	4	1	25.0
D. fragilis with other amebas	1	1	100.0

E. coli or Endolimax nana from E. histolytica as regards motility, ingestion of red blood cells,[20] ectoplasm, nucleus and the like. Many believe it a safe rule to regard as E. histolytica [21] any ameba in the feces of man which contains red blood cells. However, since it is admitted that E. coli [22] and Endolimax nana [23] may also ingest red blood cells, it is unfortunately impossible to determine the number of patients who, under such mistaken diagnoses, have been treated for E. histolytica. Furthermore the precystic amebas of E. histolytica and E. coli are virtually indistinguishable from one another, even to the most expert observers.[24] When only trophozoites of ameba are found, some suggest waiting for the development of cysts [25] before making a diagnosis. This does not apply to Dientamoeba fragilis, for which no cyst has been described.

PATHOLOGY

Faust states that in the majority of cases of heavily infected persons in regions in which the incidence of E. histolytica infection is high the organism is not a tissue parasite [26] but a commensal and that E. histolytica did not always produce gross lesions in man or in all species of monkeys. On the other hand, Craig [25] is

TABLE 2.—*Control Study: Ameba-Free Patients Treated with Carbarsone: Three Negative Stools*

Total Number	Improved	Not Improved
28	4	24

under the impression that all carriers of E. histolytica show some evidence of tissue invasion. He reviewed reports of autopsies on groups of men and monkeys in which colonic symptoms were not found but there were amebas in the feces. He found ulcerative lesions in the cecum of all of them and concluded that there is no such thing as a healthy carrier of E. histolytica. The autopsies on the monkeys were done after an acute experiment. The autopsies on human subjects were performed in the tropical zone. However, one cannot accurately compare the autopsies performed in the tropics with those performed in the temperate zone. David Meranze, pathologist at the Mount Sinai Hospital, has performed more than one thousand five hundred autopsies in the past ten years. He was rarely able to demonstrate gross lesions of the cecum which could be called amebic ulcers. Nevertheless, if one were to accept Craig's analysis, at least 5 per cent, or 75 cases, should have been observed.

TABLE 3.—*Outstanding Symptoms Noted in Patients with All Forms of Ameba*

Symptoms	Number of Cases	Per Cent
Tiredness	258	63.5
Weakness	194	45.5
Constipation	207	50.9
Flatulence	183	45.0
Diarrhea	67	16.5
Belching	156	38.4
Bloated	179	44.0
Palpitations	86	21.1
Abdominal discomfort	163	40.1

Craig [25] found the strongest positive results with his complement fixation test in symptomless carriers. In contrast, Sapero [27] reported that almost 50 per cent of E. histolytica carriers had symptoms directly or indirectly attributable to the organism. Since the complement fixation test is evidence of a systemic reaction and since others [28] have also shown that other forms of ameba are capable of producing symptoms mildly

12. Orticoni, A., and Gazzola, M.: Entérite dysentériforme par Amoeba coli, Presse méd. **30**: 1052 (Dec. 6) 1922.
13. Rankin, F. W.; Bargen, J. A., and Buie, L. A.: Colon, Rectum and Anus, Philadelphia, W. B. Saunders Company, 1932, p. 308.
14. Robertson, A.: Case of Human Infection with Dientameba Fragilis, Jepps & Dobell 1917, J. Trop. Med. **36**: 243 (July 16) 1923.
15. Thomson, J. G., and Robertson, A. L.: Dientamœba Fragilis, J. Trop. Med. **26**: 135 (May) 1923.
16. Hakansson, E. G.: Dientamœba Fragilis: A Cause of Illness. Am. J. Trop. Med. **16**: 175 (March) 1936.
17. Wenrich, D. H.: Studies on Dientamœba Fragilis (Protozoa): II. Report of Unusual Morphology in One Case with Suggestions as to Pathogenicity, J. Parasitol. **23**: 183 (April) 1937.
18. Meyer, K. F., and Johnstone, H. G.: Laboratory Diagnosis of Amebiasis, Am. J. Pub. Health **25**: 405 (April) 1935. Magath, T. B.: The Laboratory Diagnosis of Amebiasis, J. A. M. A. **103**: 1218 (Oct. 20) 1934.
19. Wenrich, D. H., Stabler, R. M., and Arnett, J. H.: Endamœba Histolytica and Other Intestinal Protozoa in 1,060 College Freshmen, Am. J. Trop. Med. **15**: 331 (May) 1935.
20. Kellogg, W. H., and Scott, E. A.: The Laboratory Diagnosis of Amebiasis, Am. J. Pub. Health **27**: 813 (Aug.) 1937. Wenrich, Stabler and Arnett.[19]
21. Wenyon and O'Connor, cited by Lynch, K. M.: Protozoan Parasitism of the Alimentary Tract, New York, Macmillan Company, 1930, p. 97. Craig.[18]
22. Tyzzer, E. E., and Geiman, Q. M.: Ingestion of Red Blood Cells by E. Coli and Its Significance in Diagnosis, Am. J. Hyg. **28**: 271 (Sept.) 1938.
23. Meleney, N. E., and Frye, W. W.: Practical Value and Significance of the Complement-Fixation Reaction in Amebiasis, Am. J. Pub. Health **27**: 505 (May) 1937.
24. Dobell, Clifford, and O'Connor, F. W.: The Intestinal Protozoa of Man, London, J. Bale, Sons & Danielsson, 1921, p. 29.
25. Craig, C. F.: Amebiasis and Amebic Dysentery, Springfield, Ill., Charles C. Thomas Publisher, 1934.
26. Faust, E. C.: Incidence and Significance of Infestation with Entamoeba Histolytica in New Orleans and American Tropics, Am. J. Trop. Med. **11**: 231 (May) 1931. Meleney and Frye.[23]
27. Sapero, J. J.: Clinical Studies in Non-Dysenteric Intestinal Amebiasis, Am. J. Trop. Med. **19**: 497 (Nov.) 1939.
28. Musgrave,[5] Hall and Reed,[9] Orticoni and Gazzola,[12] Rankin, Bargen and Buie.[13]

similar to those produced by E. histolytica, is one not justified in assuming that they may also produce a systemic reaction? If this is so, then one may hope some day to have a complement fixation test for them.

Almost all our patients were examined with a sigmoidoscope and 109 of them showed a spastic sigmoid with a dry thickened hyperemic mucosa (table 1). In spite of the fact that a dry, spastic, irritable colon

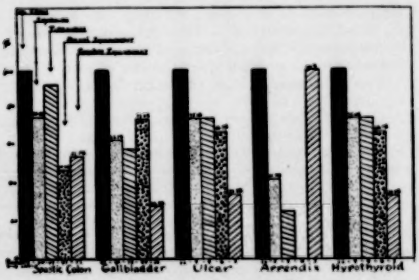

Chart 1.—Tiredness associated with selective diseases.

might be attributed to any one of a great number of causes, the marked improvement demonstrated sigmoidoscopically in so many of these cases following antiamebic therapy suggested that pathologically and clinically the protozoa may have been responsible for the inflammatory reaction.

METHOD OF STUDIES

Since we were planning an evaluation of the clinical improvement resulting from specific treatment, it became obvious that no claim of complete relief of symptoms would be possible in cases of complicated chronic sinusitis, cholecystitis, peptic ulcer, ulcerative colitis and the like. It was therefore necessary to devise some simple mathematical formula for "subtraction of symptoms relieved" from the total number of symptoms present. Symptoms persisting after adequate therapy were then interpreted as due to complicating conditions. This formula will be referred to as the "rule of subtraction."

Our results with antiamebic therapy in these cases were so striking that it was deemed of importance to determine the tonic versus the specific effect of the arsenic used. It was also of interest to ascertain what part suggestion played in the results obtained. Almost all the patients were given 3¼ grains (0.25 Gm.) of carbarsone (para-carbamido-phenyl-arsonic acid; arsenic content from 28.1 to 28.8 per cent) twice daily for ten days. A small group of patients with ameba in their stools were given solution of potassium arsenite in the usual therapeutic doses for a period of ten days, and the effects were noted. While under treatment they also were placed on the same diet as that prescribed for our active cases. Disappearance of symptoms or of amebas was not recorded in any case. For practical purposes we set a limit of three negative stools as evidence of the absence of amebas. However, like other workers,[29] we have seen cases in which as many as 10 or more specimens were examined before protozoa were found. There are numerous reasons to account for this difficulty, but space does not permit their discussion.

A course of carbarsone was administered under the same conditions to another group of patients not infected with amebas. Of 28 patients in this group, 24 showed no relief of symptoms and 4 were improved (table 2). Whereas Paulson [30] is somewhat inclined to attribute the improvement in his cases to the tonic effect of the arsenic, we feel equally justified in assuming that the improvement was due to the presence of amebas which we failed to find. The effects of the specific therapy were usually manifest in from three to five days, or before the first course of treatment was completed. Admitting the absence of deliberate psychic influence, the tonic, nonspecific effect of arsenic would not usually manifest itself in so short a time. Furthermore, it does not seem possible that almost 50 per cent of these results should be due to suggestion.

SYMPTOMATOLOGY

Amebiasis is defined by Musgrave [6] as any pathologic condition caused wholly or in part by protozoa of the genus Endamoeba. Amebiasis per se can be responsible for many symptoms associated directly or indirectly with the colon. Many of our patients had coexisting diseases (table 3) the symptoms of which frequently distracted attention from the symptoms due to the amebic infection. In order to evaluate properly which of the several symptoms were due to one or the other disease, the problem was approached in the fairest possible manner. For this purpose it was considered important first to eradicate the amebas in all cases of multiple infections. A careful record was kept of the symptoms which disappeared during and after the treatment. Those symptoms which persisted after the treatment was given were interpreted as being due to the accompanying infection. Paulson [30] believes that the only way that the protozoal symptom relationship can be evaluated is after disappearance of all symptoms. It is generally known that diseases of the colon may mimic some of the diseases of the upper part of the abdomen, such as ulcer or diseases of the gallbladder or kidneys.

Chart 2.—Outstanding symptoms associated with Endamoeba histolytica, Endolimax nana and Endamoeba coli.

The patients here considered were never really seriously ill but suffered symptoms of only mild or moderate character. As a rule they are unable to date the onset of the illness. The symptoms, although annoying, seem vague and unimportant, so that frequently no medical attention is sought. There may be slight indigestion, a fleeting abdominal cramp or gaseous

29. DeYoung, Willard: Sources of Error in the Laboratory Diagnosis of Amebiasis, J. Lab. & Clin. Med. 21: 1149 (Aug.) 1936. Meyer and Johnstone.[6] Magath.[9]

30. Paulson, Moses and Andrews, Justin: The Role of Symptoms and Signs in Amebiasis, Ann. Int. Med. 13: 64 (July) 1939.

distress most commonly located below the navel. The symptoms may be confined to the lower right quadrant and be mistaken for appendicitis. The patient may feel tired on arising as from inadequate rest in spite of from eight to ten hours of sound sleep and may seem unable to get started until about 11 a. m. and by late afternoon is ready to lie down again. It is an effort for him to move but, once started, he gets along well enough. He is easily exhausted by the slightest exertion, has lost his "pep," does not feel like standing erect and does so only with an effort.

The stools may become altered, at times mushy or even watery, but more frequently there is constipation. Bowel elimination does not seem to relieve the abdominal discomfort entirely. The patient may suddenly experience a sense of well-being for several days or weeks and go on to complete recovery. This may be the result of a temporary or permanent immunity or because most of the protozoa have been washed out. He may remain well until they multiply again in sufficient numbers to produce symptoms. The presence of these organisms in the intestine may by their local effect or, if we may presume, their "toxic" effect, aggravate the coexisting diseases. They may also retard or prevent a normal response to the treatment of these diseases.

Hall and Reed[9] suggest that patients with vague, minor or apparently functional symptoms who have been diagnosed as neurasthenic or neurotic should have their stools examined for protozoa. In a large number of such cases, in which examination revealed nothing but E. coli, good results were obtained from antiamebic therapy.

For a clear picture of etiology and symptom relationship, it was necessary to group apart those patients with one form of ameba from those with two or more forms (table 4). Of 406 patients with all forms of ameba 258, or 63.3 per cent, complained of feeling tired and 184, or 45 per cent, felt weak. Thus 70 per cent of all patients harboring Endolimax nana alone and 61.6 per cent of those harboring E. coli alone felt tired, as compared to 69.9 per cent of the patients with E. histolytica. Two hundred and seven patients complained of constipation, although this was not necessarily due to the presence of the amebas. A number of the patients were cured of their constipation which had developed with the onset of symptoms. Diarrhea or mushy stools were observed in 68 cases. In 23 of these Endolimax nana was the only form of ameba found, in 15 cases E. coli and in 13 cases E. histolytica, while in the remainder of the group two or more forms of ameba were present. One hundred and sixty-three patients complained of some abdominal discomfort. This is suggested as being due to the presence of the amebas by the simultaneous disappearance of the discomfort and of the amebas. The most common site of abdominal distress was below the navel, most frequently in the lower right quadrant. Twelve patients with these symptoms were given a tentative diagnosis of appendicitis. Those harboring two or more forms of ameba were interesting in that a greater number of them had symptoms possibly due to symbiosis. Thus 80 per cent of these complained of feeling tired and the like. In 12 cases, hypothyroidism was diagnosed because of marked asthenia, hypotension, increased cholesterol and low basal metabolic rate. Their response to thyroid medication was not commensurate, but in 9 cases removal of the protozoa produced from good to excellent results.

RESULTS

It was interesting to observe the results of treatment of patients with many symptoms and to estimate the numbers caused by amebas by using the "rule of subtraction." These results were based on observation and follow-up from one month to six years of 406 cases of all forms of intestinal ameba; 179 of these, or 44.1 per cent, improved following eradication of the protozoa. The most prevalent was Endolimax nana, which was encountered 184 times. It was found alone in 143 cases and in 41 cases together with other forms of ameba. Eighty, or 55.9 per cent, of cases with a single type of ameba showed some improvement, while in 20 per cent of this group the results were excellent. Second in importance from a numerical standpoint was E. coli. It was found in 172 cases, in 99 instances without other forms of ameba and in 73 with one or more of the other forms. Forty-five patients, or 45.3 per cent, showed some improvement.

Iodamoeba bütschlii was observed in 8 cases. It was never found alone, so that we were unable to evaluate its clinical importance. Furthermore, those patients in whom it was found did not show any more distinguishing symptoms than did the other three forms of ameba under consideration.

Some of our patients were found to have a recurrence of the ameba within six months to two years. It was difficult to determine whether it was due to inade-

TABLE 4.—*Symptoms and Signs Associated with Single and Mixed Types of Ameba*

Number and Type of Amebas		Tiredness			Abdominal Discomfort			Diarrhea		
		Number of Cases	Number Improved	Per Cent Improved	Number of Cases	Number Improved	Per Cent Improved	Number of Cases	Number Improved	Per Cent Improved
E. histolytica alone	43	30	20	66.7	13	10	76.9	13	12	92.3
E. histolytica with other forms of ameba	52	41	27	65.8	36	24	66.7	17	4	23.5
Endolimax nana alone	143	101	71	70.2	51	34	66.7	27	23	85.3
Endolimax nana with other forms of ameba	41	32	22	68.7	25	15	60.0	10	10	100.0
Endamoeba coli alone	99	61	33	54.1	34	34	62.9	24	16	66.7
Endamoeba coli with other forms of ameba	73	59	41	69.5	45	30	66.7	21	16	76.1
Iodamoeba bütschlii alone	0	0	0	....	0	0	....	0	0	....
Iodamoeba bütschlii with other forms of ameba	8	4	3	75.0	2	2	100.0	3	1	33.3
Dientamoeba fragilis alone	4	4	4	100.0	1	1	100.0	1	1	100.0
Dientamoeba fragilis with other forms of ameba	1	1	1	100.0	0	0	0	0	0	....

TABLE 5.—*Results of Antiamebic Therapy*

Total Cases	Males	Per Cent	Females	Per Cent	Total Improved	Per Cent
406	160	39.4	246	60.6	179	44.1

quate treatment or to reinfection. We are inclined to believe that they were reinfected because this is apt to occur unless contacts are taken seriously and are thoroughly treated.

To summarize the treatment briefly: Patients were placed on a high protein, low carbohydrate, high vitamin diet.[31] Most patients were given one or two courses of carbarsone. In several instances a course of vioform-Ciba and emetine hydrochloride was also given. It is remarkable to note the difficulty in finding cysts and trophozoites of ameba in these cases of mild involvement after the third day of treatment with carbarsone, and by the fifth day the protozoa had disappeared entirely. This was not usually observed when we started the treatment with emetine hydrochloride. Craig prefers to reserve the use of emetine hydrochloride for special cases and advises against its routine use.[25]

REPORT OF CASES

Case 1.—A white woman aged 62, the wife of a physician, suffered for four months with diarrhea and severe pains in the lower part of the abdomen. She was admitted to a hospital, where she was treated for diverticulitis. She was discharged as unimproved, after which cancerophobia with dysuria and frequency of urine developed. Six weeks later she was admitted to another hospital, where she was treated unsuccessfully for two weeks. When first seen in the office, sigmoidoscopic examination revealed a spastic sigmoid with an edematous and hyperemic mucosa. A smear from the sigmoid revealed many actively motile trophozoites and cysts of E. coli. Treatment was started immediately, and within five days she began to show signs of improvement. Within ten days she was clinically better, passing formed stools, and the acute hyperemia in the sigmoid had almost disappeared. She has remained well for the past six months.

Case 2.—A white man aged 39 suffered for three weeks from violent cramps and ten to fifteen watery bowel movements daily. He did not respond to the usual diarrhea therapy given him elsewhere. On first examination, trophozoites of E. coli were recovered through the sigmoidoscope. The mucous membrane was hyperemic and edematous. Three days after antiamebic therapy was started, the diarrhea and cramps ceased. He was completely well in ten days, and his sigmoid appeared normal within three weeks.

Case 3.—A white girl aged 16 years was seen in consultation with a surgeon because of acute pain in the lower right quadrant of the abdomen and fever. There was pain but no tenderness or muscle guarding in the lower right quadrant. Her father was being treated for infection with E. coli. As a contact with the same protozoa in the feces she did not receive antiamebic therapy because she was menstruating at the time. Treatment is usually withheld during the menses, because while a patient is on carbarsone therapy the urine should be watched for albumin, red blood cells and casts. The surgeon wanted to operate, but as the leukocyte count was normal, antiamebic therapy was permitted. This produced a rapid recovery. There has been no recurrence of the symptoms for the past three years.

Case 4.—A white woman aged 35 for three and one-half months after an attack of grip continued to have an elevated temperature ranging between 99.1 and 100.5 F. She had occasional chills and was very tired and weak. All studies including cultures of blood and excretions, and roentgen examinations were negative except for Dientamoeba fragilis in the stool. She had many consultants who, when informed that Dientamoeba fragilis was present, unanimously stated that it could not produce symptoms. Every possible therapy was given including sulfanilamide, azosulfamide, quinine and blood transfusions, all without any change in her condition. The third day after antiamebic therapy was started her temperature dropped to normal. She has had no recurrence for the past twelve months.

Case 5.—A white woman aged 35 had a cyst adenoma removed from the thyroid gland in January 1939. Her preoperative basal metabolic rate was —7 and the postoperative —20 per cent. Before the operation she had complained of extreme tiredness and exhaustion. Thyroid and vitamins were given without any influence on the patient except to elevate the basal metabolic rate to —5 per cent. She summered at the seashore but failed to regain her strength. In October the study of her stools showed the presence of cysts of Endolimax nana with as many as from 20 to 30 per high power field. Five days after treatment was started the patient felt a sudden change for the better. On the tenth day she was in excellent condition. Two weeks later she did not feel as peppy and, although no protozoa were found in the stools, a second course of carbarsone was given. She responded in the usual time and has been feeling excellent since.

Case 6.—A physician aged 40 suffered for ten weeks with discomfort in the lower right quadrant and shooting cramps across the upper part of the abdomen, followed by loose, explosive bowel movements. These attacks occurred about once a week, and except for being unusually tired he was well during the intervals. Stool specimens contained 1 or 2 cysts and trophozoites of Endolimax nana. Antiamebic therapy brought about complete relief of symptoms. He states that he feels as though he could now do twice as much work as before treatment.

COMMENT

Amebiasis represents a very important problem from the point of view of public health. About 35 per cent of the population in and about large cities are infected with one or more protozoa.[32] This compares favorably with from 50 to 75 per cent [23] of the population in some small towns of the South. In the office and laboratories, where the time element is not a factor, the percentage increases with experience, the time spent and the number of specimens examined.[19] It is estimated that about fifteen million or more persons have symptoms attributable to the parasitic effect of these forms of ameba. At this rate 44.1 per cent, or about thirteen million persons, may perhaps be benefited either in part or completely by their eradication. It has been suggested that this is not practical,[32] yet the attempts to eradicate smallpox, typhoid, yellow fever, malaria and other diseases were no small undertaking. It has been shown that these amebas are capable of producing many symptoms mimicking functional and organic conditions. Antiamebic therapy was followed in 44.1 per cent of the cases by some expression of relief. If the patient would not express himself favorably then the presence of the ameba was assumed to be commensal.

The internist is often consulted because the patient complains of being weak or tired. Many diseases must be ruled out, but in the absence of symptoms suggesting some colonic disturbance how often does he think of protozoa? Protozoan infection is the most common and universal disease of man; it is the least understood of all human infections. It appears simple to the one who constantly sees and works with it. He recognizes the specific ameba and treats the condition. Clinically the patient may be cured of the infection and the symptoms which accompanied it. This has been demonstrated time and again by several observers,[28] but unfortunately they represent only a small minority group.

There still are many of the common diseases, such as colds or measles, for which Koch's postulate has never been fulfilled. We believe that the same may be true of the experiments with E. coli. We

31. Faust, E. C.: Amebiasis in Dogs, Am. J. Trop. Med. 12: 37 (Jan.) 1932.

32. Lynch: Protozoan Parasitism of the Alimentary Tract, p. 26.

are inclined to believe that E. coli, Endolimax nana and Dientamoeba fragilis may produce symptoms as debilitating as a cold except that the symptoms are usually of a chronic nature. Nevertheless, not because of the absence of clinical conditions but based on experimental evidence only, these protozoa have been considered nonpathogenic. There are a great many circumstances which may influence an experiment, such as bacterial symbiosis, environment, virulence of the parasite and the susceptibility of the host. Musgrave[6] gave many reasons for believing that the results of the feeding experiments to prove the "harmlessness" of E. coli were inconclusive. He states that diarrhea is not a necessary symptom and that the absence of clinical symptoms and ulcerations in the rectum is not necessarily evidence of the absence of ulceration higher up. The fact that amebas are present in the stools of patients without producing symptoms is not acceptable evidence of harmlessness, because patients have been observed for many years with E. histolytica in their stools without the production of symptoms. Nevertheless clinical colitis as severe as that observed with typical E. histolytica is occasionally seen when prolonged search reveals nothing but E. coli.[33] We have also seen and successfully treated with antiamebic therapy patients suffering with violent cramps and diarrhea in whom nothing but E. coli was found. We have likewise made similar observations on persons, groups and families harboring only Endolimax nana. Some clinicians [34] referring to these claims state that it represents merely a failure to find E. histolytica. We admit such a possibility but to not more than 10 per cent; otherwise, all protozoal surveys which have shown the existence of E. histolytica in our part of the country of from 5 to 15 per cent are wrong and should be closer to 50 per cent.

Although at the present time there exists a reluctance to accept the pathogenicity of Endamoeba coli, Endolimax nana and Dientamoeba fragilis, we hope that this report will stimulate further clinical and experimental investigations.

CONCLUSIONS

1. Stool specimens from 406 patients located in and about Philadelphia harbored one or more of the five forms of intestinal amebas. The most prevalent was Endolimax nana; E. coli was second.

2. These organisms, including Dientamoeba fragilis, had a causal relationship to their symptoms to the extent of 44.1 per cent.

3. The most common symptoms were constitutional; i. e., extreme tiredness and weakness. Of local nature were abdominal discomfort and diarrhea.

4. When a coexisting disease is active the results to be expected may be only partial; i. e., only those symptoms for which the ameba is responsible will disappear.

5. The response to carbarsone therapy is usually within three to five days. When no improvement is noted by the tenth day one may be fairly certain that the symptoms were not due to the presence of the ameba.

6. From a clinical point of view, all forms of ameba appear to have a pathogenic role. Furthermore, since they may represent a serious public health menace and problem, it is suggested that they should be accepted and treated as such until clinical evidence to the contrary can be proved.

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33. Musgrave,[6] Hall and Reed,[9] Brown,[11] Rankin, Bargen and Buie.[10]
34. Brown, P.: Personal communication to the authors.

ABSTRACT OF DISCUSSION

DR. ASHER WINKELSTEIN, New York: Drs. Rothman and Epstein state that amebas other than Endamoeba histolytica may be pathogenic. It might be stated that this is debatable. There is as yet no conclusive evidence, clinical or pathologic, about it. They also say that the protozoal infection is common (35 per cent of the population). It must be admitted that it requires experts to find and differentiate the amebas, and more trained workers are certainly needed in this field. One fourth of their cases showed a spastic sigmoid with a dry hyperemic mucosa. I have had a large experience with sigmoidoscopy and do not consider this a pathologic finding. Their control group, 28 patients with symptoms without amebas, were treated with carbarsone without relief. This seems to answer the objection that arsenic itself may induce the tonic effect; however, the symptom complex described by them is so vague and broad that the small control group selected may have little significance. The symptom complex of asthenia and vague abdominal symptoms with constipation or diarrhea, while indefinite, is one of the most common symptom complexes seen in general practice. In my experience it is most often a neurosis. The finding of various amebas may have no more significance in this group than in any other group of the population even without symptoms. Their patients were treated with diet, vitamins and carbarsone. There was improvement in 44 per cent of the Endolimax nana and Endamoeba coli groups. It is surprising, if indeed there is a causal relationship between these amebas and the symptoms, that only half of the patients were helped. The authors conclude that some 35 per cent of the population is infected with these amebas and that this constitutes an important public health problem. Before accepting this conclusion, however, I feel it must first be proved that these amebas are pathogenic and, if so, that carbarsone cures these patients. Nevertheless, I wish to commend strongly the authors for bringing this important subject to the fore. It deserves a careful check-up study.

DR. HORACE W. SOPER, St. Louis: Early in my work I formulated a rule that every patient, no matter what his complaint, should receive a careful feces analysis and proctosigmoidoscopy. By employing this method I have been able to diagnose many cases of catarrhal colitis that might have been otherwise overlooked. By catarrhal colitis I mean that the feces will contain an excess of mucus, some of which will contain pus cells. In the majority of cases Amoeba coli or some of the flagellates are present. The proctoscopic picture usually shows a congestion of the mucous membrane of the rectum and pelvic colon. I reported a case of acute jejunitis about two years ago in the *American Journal of Digestive Diseases and Nutrition* that was definitely produced by Trichomonas intestinalis; the roentgenogram, the dilatation stopping abruptly at the ligament of Treitz, made the diagnosis of carcinoma. The abdomen was opened and an active jejunitis was found which responded to acetarsone therapy. I use acetarsone in preference to carbarsone because I consider it more toxic to the parasites and rarely toxic to the patient.

DR. PALMER DYSART, Phoenix, Ariz.: My experience is in accord with that of Drs. Rothman and Epstein, but, with Dr. Soper, I would add Giardia, Chilomastix and the Trichomonas flagellates to the pathogens which they presented. This is a remarkable survey of a condition that is difficult to follow. A group of us in Arizona, when presented with a case of vague gastrointestinal distress, of which the outstanding symptoms are fatigue, abdominal pain, gas and nausea, with or without relation to meals, and constipation more often than diarrhea, but also perhaps joint pains, neuritis and headaches, including migraine, in which one or more of these parasites are found, feel, like Drs. Rothman and Epstein, that we may have discovered the cause of their complaints. Then, as a proof satisfactory to us that these parasites are pathogenic, when we have cleared the intestinal tract of these organisms we expect the majority of these patients to be relieved of symptoms, the exact statistics for which I do not have at hand. I admit that we may find these parasites in some without apparent disease. These may be carriers. Authority has stated that these organisms are not pathogenic. It will require, therefore, much proof to controvert this belief.

Dr. Moses Paulson, Baltimore: If the deductions of Drs. Rothman and Epstein are correct, we have just passed an important milestone in clinical protozoology. Unfortunately, they have failed to prove their contentions experimentally, statistically and clinically. Experimentally there are no available data acceptable to recognize protozoologists establishing amebas other than Endamoeba histolytica to be of pathologic import. Nor has any experimental evidence been offered here indicating otherwise. Statistically and clinically the following must be considered: Less than 50 per cent of the patients studied have been partially—not completely—relieved of symptoms on eradication of nonpathogenic amebas. At the same time a high vitamin, high protein, low carbohydrate diet (reduced residue-reduced stimulating routine) was given. Since many patients suffered from constipation it is fair to assume, although there is no specific mention of this by the authors, that they were treated also for this complaint. These two measures could account for much of the reported amelioration. The addition of adequate psychotherapy in cases in which there are similar complaints without structural change to account for them has in my experience resulted in a higher percentage of symptomatic relief either in the presence or in the absence of nonpathogenic protozoa. This is not to say that nonpathogenic protozoa should not be eradicated. A clinical entity or syndrome cannot be claimed unless the set of symptoms is completely eliminated with the eradication of the presumed etiologic agent in the vast majority of cases. The greater number of the authors' cases that failed to respond and many others that did so partially are to me the controls disproving the claim. The work that Andrews and I did about three years ago at the Johns Hopkins Hospital appears pertinent. The role of symptoms and signs in those with Endamoeba histolytica was studied. The number of cases was not large but the data appeared statistically valid, since no exceptions were encountered. Eliminating those having Endamoeba histolytica with diarrhea or dysentery, those manifesting Endamoeba histolytica with other digestive complaints for which no structural change could be held accountable were given carbarsone. For several weeks to a month or two many were completely relieved. Then all returned with their original complaints despite our inability to find amebas. When given antispasmodics, sedatives and hypnotics, all were completely relieved again. When these were discontinued the complaints recurred but still no amebas were to be found. Coincidentally with reinstitution of this therapy, complete relief was again obtained.

Dr. Anthony J. Bassler, New York: In the city of New York about 7 per cent of people have parasites and about 4 per cent have Endamoeba histolytica. I think it is much to be desired to remain on the side of the old teaching of parasitology of the past, to be conservative with regard to these cases unless the symptoms are characteristic of amebiasis as we understand it. I feel this way: We do get flagellate diarrheas and we, of course, have amebiasis, and we do have many problems, and when one comes to parasites found in a case, one is inclined to attach a significance to it, and, as Dr. Paulson has said, there are many things that can happen in the abdomen (I counted them up not long ago and they numbered two hundred and forty-two conditions that can happen in an abdomen). Most of these are functional and they are characterized by the protean symptoms expressed. Thus we should be careful not to give significance to something that really is not causative.

Dr. Maurice M. Rothman, Philadelphia: In answer to Dr. Winkelstein's question as to why only one half of our patients were relieved, we believe that those 44.1 per cent relieved represent the number whose symptoms were attributable to the presence of the ameba. As to the proof of pathogenicity of these organisms, we are unable at the present time to offer direct experimental evidence. However, it is unfortunate that there also exist many other diseases for which we recognize a pathologic entity but for which Koch's postulates have never been completely satisfied. The common cold and many other diseases caused by a virus are such examples. Dr. Soper believes that flagellates are pathogenic. This is of interest because we, as well as other clinicians, are of a like opinion. Nevertheless many of these same men unhesitatingly deny a similar role of pathogenicity for amebas other than Endamoeba histolytica. One of the reasons is based on the fact that they are not capable of invading tissue. Yet it is recognized that flagellates are not tissue invaders. Our observations are in accord with the experience of Dr. Palmer Dypart, who found constipation to be more common than diarrhea. In regard to Dr. Paulson's statement concerning the lack of experimental evidence, we prefer to regard the past experiments as a failure to reproduce the clinical picture rather than proof of the evidence of the absence of pathogenicity. Furthermore, there have never appeared in the literature reports of the failure to obtain some relief following specific treatment of patients with symptoms harboring the so-called nonpathogenic amebas. In this study we have found that diet, vitamins and the relief of constipation did not alleviate specific symptoms without the removal of the ameba. We believed it advantageous first to dispose of the protozoa. By so doing one can determine the exact symptoms due to the presence of the organisms. This is especially important in the presence of coexisting diseases. This has a direct bearing on Dr. Paulson's recent report on the treatment with carbarsone of 26 cases of Endamoeba histolytica. It is not unusual to obtain symptomatic relief with nonspecific therapy, but if those symptoms are due to the presence of the ameba they will recur. Most of our results were lasting, while those which were not were due either to inadequate treatment or to reinfection.

Clinical Notes, Suggestions and New Instruments

EXFOLIATIVE DERMATITIS AND DEATH DUE TO PHENOBARBITAL

Daniel L. Sexton, M.D.; George M. Pike, M.D., and Arthur Nielson, M.D., St. Louis

The toxic effects of phenobarbital, for the most part, are limited to a cutaneous eruption which subsides soon after the withdrawal of the drug. In an occasional case a severe constitutional reaction occurs in which exfoliative dermatitis is one of the manifestations.

The first case of exfoliative dermatitis reported due to phenobarbital was that by Hamilton, Geiger and Roth [1] in 1926. Although there was an exfoliation of all epidermal layers, recovery occurred after a prolonged illness.

Eleven cases of severe cutaneous eruption were reviewed by Poole,[2] another by Haubrich [3] and two by Lancaster,[4] in one of which there were marked urticarial wheals and the patient died five days after the rash appeared. This patient was being treated for a fracture and had received 85 grains (5.5 Gm.) of phenobarbital.

Autopsy reports on the subject are few. Bronchopneumonia has been reported in a majority of the cases, but otherwise the conditions found are inconstant. Brunsting [5] recorded the death of a patient in whom severe systemic symptoms and large bullae developed. At autopsy there were no remarkable conditions seen.

At postmortem examination of a patient with nephritis who had received a preparation of theobromine and phenobarbital, which included 24 grains (1.5 Gm.) of phenobarbital over a period of eighteen days, Millard [6] found renal damage and bronchopneumonia.

From the medical (Drs. Sexton and Pike) and the dermatologic (Dr. Nielson) service, Unit II, St. Louis City Hospital.

1. Hamilton, E. S.; Geiger, C. W., and Roth, J. H.: Luminal Poisoning with Conjunctival Residue, Illinois M. J. 49:344 (April) 1926.
2. Poole, A. K.: Drug Reactions from Barbital and Phenobarbital, Yale J. Biol. & Med. 1:345 (July) 1929.
3. Haubrich, B. P.: Phenobarbital Poisoning, New England J. Med. 211:264 (Aug. 9) 1934.
4. Lancaster, A. H.: Luminal Dermatitis with Case Reports, South. M. J. 26:1142 (Nov.) 1933.
5. Brunsting, L. A.: Dermatitis Medicamentosa: Idiosyncrasy to Quinine, Phenolphthalein and Phenobarbital, Proc. Staff. Meet., Mayo Clin. 7:618 (Oct. 26) 1932.
6. Millard, R. J.: Three Cases of "Luminal" Poisoning, M. J. Australia 2:518 (Oct. 14) 1933.

Scarlett and MacNab[7] record the history of a patient who received 19½ grains (1.26 Gm.) of phenobarbital over thirteen days. Twelve days after the drug was started the patient's temperature rose, and there occurred a macular rash which eventually developed into large bullae, intense conjunctivitis and stomatitis. This patient died six days after the rash appeared. Toward the end the total nonprotein nitrogen was elevated. Autopsy showed evidence of encephalitis, for which the patient had originally been admitted and from which he had recovered clinically, and cloudy swelling of the kidneys and liver.

Sweitzer and Laymon[8] reported two cases of severe cutaneous reactions following phenobarbital with one death after 1½ grains (0.1 Gm.) daily for three weeks. This patient had exfoliative dermatitis and at postmortem examination only bronchopneumonia and fatty changes in the liver, which may have been due to the gallstones present, were found.

Wile and Benson[9] reported two cases of exfoliative dermatitis following phenobarbital with fatal outcome. One, a dentist aged 48 who had received a total of 44 grains (2.85 Gm.) of phenobarbital over a period of nineteen days, had universal exfoliative dermatitis. At postmortem examination were found dilatation of the right side of the heart, bronchopneumonia, acute bilateral purulent bronchitis and subendocardial fatty degeneration. The other patient, a man aged 45, had received a total of 42 grains (2.7 Gm.) of phenobarbital over fourteen days before a maculopapular rash developed. The rash became exfoliative and death occurred thirteen days after its first appearance. Changes found at autopsy included a bullous, ulcerative and exfoliative dermatitis, bilateral lobar pneumonia, acute diphtheritic laryngitis and esophagitis, acute passive congestion and degeneration of all parenchymatous organs.

Because of the few autopsy records available on this subject, the following report is made:

REPORT OF CASE

P. M., a white man aged 39, admitted to the St. Louis City Hospital Dec. 1, 1939, complained of epigastric pain and vomiting of three months' duration. He had had indigestion with belching and epigastric distress after meals for many years in varying degrees of severity, but this became so marked in the two weeks prior to entry that practically no food was retained. He stated that he had not taken any medication or drugs before entrance.

The patient was poorly nourished, almost emaciated, but was comfortable at the time of examination. Except for epigastric tenderness on deep palpation, examination revealed nothing abnormal. The oral temperature was 97.8 F., pulse rate 78, respiratory rate 18, blood pressure 123 systolic, 75 diastolic.

Urinalysis on admission showed no sugar or albumin, and microscopic examination of the sediment was negative. The hemoglobin content measured 12.5 Gm. (Sahli), red blood cells numbered 4,020,000 and white blood cells totaled 7,800. A differential count showed 2 per cent juveniles, 6 per cent stab cells, 54 per cent segmented forms, 33 per cent lymphocytes, 4 per cent monocytes and 1 per cent eosinophils. Analysis of gastric contents yielded normal amounts of free hydrochloric acid. The Kahn precipitation test gave negative results. Blood sugar was 55 mg. per hundred cubic centimeters (normal, from 70 to 95 mg.); nonprotein nitrogen was 14 mg. (normal, from 11 to 26 mg.). Stool examination showed no gross or occult blood.

The clinical diagnosis was peptic ulcer, and accordingly a first day Sippy diet was ordered. Three grains (0.2 Gm.) of phenobarbital was given on the night of admission. Because of vomiting, subcutaneous medication consisting of 1 grain (0.065 Gm.) of soluble phenobarbital three times daily and $\frac{1}{150}$ grain (0.4 mg.) of atropine sulfate three times daily was started the next day. The patient did very well on this regimen. On the eighth hospital day soluble phenobarbital and atropine were omitted, and 1½ grains of phenobarbital orally three times a day was ordered.

Improvement continued until the twelfth hospital day, when the patient complained of a feeling of general malaise and the previously normal temperature rose to 103 F. At this time he had no specific complaints and no eruption. On the following morning the temperature was 104 F. and the patient complained of sore throat and dysphagia. He was acutely ill with injected conjunctivas and excessive lacrimation. The skin was covered with a generalized eruption, consisting of discrete erythematous macular lesions. In the mouth were numerous vesicular lesions, some of which had ruptured and released a thin, milky fluid. There were moist rales throughout both lungs. The white cells numbered 16,600 with a shift of the left in the Schilling differential count. There was no eosinophilia. The urine showed no material changes from the examination on admission.

Up to this point the patient had received 21 grains (1.36 Gm.) of soluble phenobarbital subcutaneously and 21 grains of phenobarbital by mouth over a period of thirteen days. The drug was immediately discontinued and parenteral fluids were started. Dr. Joseph Grindon Sr. of the dermatology service saw the patient in consultation and made a diagnosis of dermatitis medicamentosa due to phenobarbital. Within twenty-four hours the cutaneous lesions progressed so rapidly that in many places they became confluent, involving large areas of skin, which soon began to exfoliate; the exfoliation is shown in the accompanying illustration. The patient became semicomatose, with a temperature ranging between 104 and 105 F., until his death on the morning of the sixteenth hospital day, three days after the appearance of the eruption.

Eruption as it appeared on second day after onset. Note areas of denudation over abdomen.

Autopsy was performed two hours after death. Over the skin of the entire body were numerous brownish red to pink areas in which the superficial layers of the skin were lost. To the edges of some of these lesions were attached large sheets of exfoliating grayish skin. These lesions were present on the ears, face, neck, chest, back, abdomen, scrotum, arms, legs and feet. The trunk showed the most generalized distribution. Some of these areas of exfoliation measured as much as 15 cm. in diameter. Many were confluent.

The right pleural cavity contained 300 cc. of straw colored fluid. The middle and lower lobes of the right lung and the lower lobe of the left lung were moderately firm but not typical of pneumonic consolidation. A hemorrhagic purulent exudate was seen in the secondary bronchi of both lower lobes. Microscopically the lung showed many alveoli filled with polymorphonuclear leukocytes, and in one section several small necrotic areas were seen. The epithelium of the esophagus was absent and in its place was a layer of fibrinopurulent exudate. The liver and kidneys were normal. No evidence of ulceration was found in the stomach or duodenum.

COMMENT

The potential danger of phenobarbital should be kept in mind. It would seem advisable to administer the drug first in small doses, increasing the dosage gradually until the patient's tolerance is established. Withdrawal of the drug at the first appearance of the rash is the safest procedure. Even then a severe constitutional reaction may occur, but for the most part a fatal outcome will be averted. The tolerance of phenobarbital depends on individual susceptibility.

University Club Building.

7. Scarlett, E. P., and MacNab, D. S.: Poisoning from Phenobarbital (Luminal), Canad. M. A. J. 33:635 (Dec.) 1935.
8. Sweitzer, S. E., and Laymon, C. W.: Severe Cutaneous Reaction to the Barbiturates, Minnesota Med. 20:92 (Feb.) 1937.
9. Wile, U. J., and Benson, J. A.: Exfoliative Dermatitis Due to Phenobarbital with Fatal Outcome; Report of Two Cases, Ann. Int. Med. 13:1243 (Jan.) 1940.

Special Article

GLANDULAR PHYSIOLOGY AND THERAPY

MENSTRUATION

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This special article is published under the auspices of the Council on Pharmacy and Chemistry. It is one of a series which will be published in book form as the second edition of "Glandular Physiology and Therapy." The opinions expressed in this article are those of the author and do not necessarily represent the views of the Council.—ED.

In the human species, menstruation is the only overt manifestation of rhythm in the female reproductive system. In other primates there may be additional and even more obvious indications of cyclic changes. Corner [1d] and Edgar Allen [1e] have recently summarized the evidence that the rhythm is maintained by a delicate balance of endocrines. We are not dealing with "an all or none" phenomenon but with a balanced system of forces which changes as a whole when any one factor changes. The oscillations of the system may have a high amplitude or they may become almost imperceptible. The system is accordingly variable in its manifestations. This is generally conceded; the difference of opinion is largely a matter of the range of variability that is to be regarded as normal. Many clinicians are unwilling to regard a cycle as normal unless its primary purpose is achieved; i. e., unless a fertilizable egg is produced. The fundamental controlling mechanism is nevertheless the same whether the optimal conditions which result in ovulation are achieved or not. In other words, there may be bleedings at regular intervals which are clinically indistinguishable from menstruation although the ovary has not responded to the extent of producing a ripe egg.

Physiologic extravasations of blood are a unique feature of the mammalian uterus. Before a scientific treatment of abnormal "functional" bleedings is possible it will be necesary to analyze the mechanisms which control normal bleedings. The analysis requires controls that can be applied only in experiments with animals. The problem seems at present to be centering about the utero-ovarian vascular system, and some consideration of the vascular changes is definitely indicated in experiments with estrogen, progesterone and similar substances.[1e]

In the human species and in certain monkeys three normal types of endometrial bleedings may be seen: [2b]

1. Menstrual bleeding. This recurs at intervals of three to five weeks and is associated with rapid involution and some necrosis of the endometrium.

2. Implantation bleeding (placental sign of Long and Evans). This occurs soon after implantation of the ovum, in many mammals. In women and macaque monkeys it appears about four weeks after the last period,[2a,c] and when it involves an external show of blood it may be indistinguishable clinically from menstruation. In such cases the onset of labor is a month earlier than expected from the history.

3. Preovulatory bleeding associated with hyperemia. This is the familiar estrous bleeding of the dog and cow; in primates it is the rather uncommon "intermenstrual" bleeding (mittelschmerz). It has been seen in the macaque at about the time of ovulation and after large doses of estrogen.[1e]

The second and third types have received far less attention than they deserve.

The liberal definition of menstruation given here is justified by the finding that the ovaries and the uterus may present a very different appearance during successive periods in the same individual [1e] and at the same stage in different individuals. In the macaque there have now been observed a large series of transitions from the maxima of the breeding season to the minima of summer. There may be extreme hyperplasia and hypertrophy of the uterus associated with an active corpus luteum in one cycle; occasionally it is impossible to tell from the endometrium whether or not ovulation has occurred. There are anovulatory cycles during which the endometrium grows more than in certain ovulatory cycles.[1e] In such cases it is necessary to have serial sections of both ovaries to prove the absence of recent corpora lutea. In other words, ovulatory and anovulatory menstruation are not distinct types; cycles with much ovarian activity grade off imperceptibly into those with little. The "staircase phenomena" of Hartman [2c] gave us the first clear evidence of this.

At present, anovulatory cycles appear to be rare in women whose periods are "regular." [3] This may be due in part to the difficulty of demonstrating them. Usually it is necessary to have both ovaries removed early in a menstrual period which appeared as expected. Such cases are rare. Inspection of ovaries at operation and of fragments from endometrial biopsy specimens often lead to error, for the conditions in ovary and uterus may vary within wide limits, with transitions from ovulatory to anovulatory cycles, as the study of the macaque has abundantly shown.[2d] There are few who can diagnose an active corpus luteum histologically. The incidence of anovulatory cycles will not be known until physicians have a sure sign of ovulation which can be readily applied to large groups of women for twelve or more consecutive cycles.

Hitherto knowledge of the sequence of events in the menstrual cycle has come from series of specimens arranged in an order that seemed logical to the investigator. Human ovaries have only occasionally been available, and it has been possible to exclude almost any given case as abnormal if the critic so desired. A large number of macaque uteri have now been studied, and one can say with assurance that the cyclic changes are fundamentally the same as in man.[4] One can therefore accept the recent observations of Markee [1c] as applicable to human conditions with but little modification. He has launched a new attack on the cycle by observing living endometrium transplanted to the

From the Department of Anatomy, University of Chicago.

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3. Rock, J.; Bartlett, M. K., and Matson, D. D.: Am. J. Obst. & Gynec. **37:** 1 (Jan.) 1939.

4. Corner, Hartman and Bartelmez: Unpublished data.

anterior chamber of the eye in macaques. He could thus observe the same mucosa with a microscope day by day or minute by minute for many cycles in normal unanesthetized animals, and his experience has been extensive enough (432 menstrual cycles) so that he can speak with authority as to the essential features of the cycle. It is significant that the onset and duration of menstruation in these bits of endometrium coincide with the same events in the animal's uterus with its intact musculature. The observations agree with conditions observed in histologic sections, substantiating and extending them, but they do vastly more than this. They give one direct visual evidence of the actual sequence of events and the first satisfactory quantitative data on the same endometrium during a cycle and in different cycles. They exclude the nervous system as a significant factor in the control of the cycle. They furnish the basis for an analysis which includes all kinds of normal cycles. Markee calls it the "growth" rather than the "menstrual cycle." It may be subdivided as follows:

1. Postmenstrual phase of relative inactivity, which may vary in length from nothing to many days or even weeks.

2. Primary growth phase, which may or may not be associated with a growing follicle. The end of this phase is usually marked by a brief halt or even a regression in growth. The cause of this remains to be investigated.

3. Secondary growth phase, which reaches a maximum in the presence of an active corpus luteum. The endometrium may double in thickness, partly as a result of increasing edema.

4. Phase of involution. This is associated with a reduction in blood flow to the mucosa, and at the end there may be superficial congestion, leukocytosis and infiltration. The edema fluid is resorbed, and the involution may reach 60 per cent. Sooner or later there is persistent blanching of the surface due to constriction of the arteries which supply the surface.

5. Phase of bleeding. The constricted arteries open up, often one by one; almost at once there is extravasation, followed by bleeding from the surface and then by desquamation of the superficial zone.

6. Repair phase. This involves reestablishment of active circulation, rejuvenescence of the endometrium and restoration of the surface epithelium.

The vascular system of the endometrium plays a major role in this cycle. The peculiar coiled arteries are one of the most distinctive features of the primate endometrium. They pass with few or no branches in myometrium or basal mucosa to supply the superficial capillary bed[5] and are "end arteries."[6] At the beginning of the first growth period they are coiled in the mucosa basally. Capillaries pass out from them to the superficial reorganizing zone, which is rapidly increasing in thickness. The arterial channels gradually differentiate in this capillary bed and slowly approach the surface. Later the arteries grow more rapidly than the surrounding tissue, so that they become coiled throughout their length. Under the influence of the active corpus luteum they eventually differentiate as far as the surface epithelium.

The basal region of the endometrium has an independent supply of blood derived from small arteries and from anastomoses with the capillary bed of the myometrium. There is no sharp line of demarcation between this zone and that supplied by the coiled arteries. The drainage from the mucosa is by venules, which are predominantly radial, but with numerous anastomoses, which may enlarge into sinuses. Certain venules pass, without anastomoses, from the superficial to the deep veins of the endometrium. Lymphatics have been described, but their presence in the mucosa has not yet been proved.

Markee's[1,b,c] observations on transplants show that there may be much variability in a given endometrium even in successive ovulatory cycles. His descriptions provide the basis for the following résumé of a typical cycle.

During the first three weeks the coiled arteries alternately dilate and constrict, so that as one looks at the surface it slowly "blushes" and then "blanches," a cycle occupying one to one minute and a half. After the second growth phase is well under way the vascular rhythm is occasionally disturbed, and in general the color of the transplant becomes paler. Presently the blood almost stops flowing through the dilated superficial vessels. Leukocytes begin to migrate into the stroma; the transplant is turning blue and manifestly shrinking. There is a loss of water.[7] With this involution, the tortuous arteries show buckling. These events herald the onset of menstruation. In the course of the next day one coiled artery after another clamps down, and for many seconds at a time not a single blood corpuscle moves in the superficial zone, although basally the blood is flowing freely. After several hours an artery here and there opens up, and almost at once blood pours out into the tissue from opened capillaries or arterioles. In the course of a few minutes a subepithelial hematoma develops, it soon ruptures, and dark blood slowly streams out over the surface. This blood does not clot. Necrosis sets in at the surface, and the ends of the coiled arteries are sealed by dead cells. Then fissures appear at the edges of blood-soaked areas; as they extend down into the tissue, small fragments are slowly loosened from the surface. An artery that has bled is not likely to bleed again during this flow, but if the animal is frightened or annoyed, the necrotic end may break and spout blood for minutes at a time. This blood promptly clots. Such conditions probably obtain in various metrorrhagias.[8]

At intervals during the next two days or so other arteries begin to bleed, and so the process is repeated, each time in a different region. By the third or fourth day the surface has become denuded and ragged; coiled arteries and glands project out from it, and veins are open. Slowly a little regurgitated blood oozes from an open vein for a period of many minutes. The wound surface looks clean, and most cells seem normal. Presently cells begin to migrate out in all directions from torn glands, and in two hours the surface epithelium is practically restored. During all the period of bleeding the circulation of blood has continued basally; now it is accelerated. Then the coiled arteries begin to develop capillary sprouts, which anastomose,

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6. Jones, H. O., and Brewer, J. I.: Am. J. Obst. & Gynec. **38**: 839 (Nov.) 1939.
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and blood flows through them. The rejuvenation of the superficial zone is now under way, and a new growth cycle has begun.

THE MECHANISM OF MENSTRUATION [9]

It is not yet possible to enumerate all the hormonal factors concerned in the control of the menstrual cycle. The interactions of anterior hypophysis and ovary are essential [10,d] but other endocrines may normally be involved. So far as the mechanism which brings about bleeding is concerned it would appear from what has been said that the question can be narrowed down to the factors which control the coiled arteries of the endometrium.

The hormone withdrawal hypotheses [9a] are fundamentally similar to the corpus luteum failure hypothesis of R. Meyer. That is, they attribute the menstrual changes to the elimination of a hormone or hormonal complex. It is now possible to say that ovarian hormone withdrawal initiates the characteristic premenstrual and menstrual behavior of the coiled arteries.[1c]

Various observations indicate that it is not the elimination of a specific hormone but an abrupt reduction in hormonal level which produces this type of bleeding. These data may be summarized as follows:

1. Hisaw [9f] found that a reduction of 50 per cent in the amount of estrogen administered to a spayed macaque results in menstrual bleeding. This has been abundantly confirmed and elaborated.[10] Markee [1c] has clearly demonstrated the importance of an abrupt change.

2. The thresholds in these reactions are vague and variable although it has been shown that in a spayed animal a definite minimal amount of estrogen is necessary to maintain the endometrium in a condition that will permit withdrawal bleeding.[11]

3. In keeping with this variability is the fact that various insults to the ovary such as unilateral ovariectomy or even resection may produce menstrual bleeding. Similarly a profound systemic disturbance such as transection of the spinal cord initiates it.[12] As the level of the transection plays a part, it may be that the nerve supply of the ovary is involved in the reaction.

4. Bleeding during the course of treatment with estrogen may perhaps involve periodic hormone reduction through changes in renal thresholds.[13]

5. The reaction is not specific for any one hormone; the effects of estrogen, progesterone and androgen withdrawal are similar.[14]

The objection has been raised that the estrogen titer in the circulating blood may be high premenstrually and during menstruation [15] and the premenstrual fall in estrogen excretion does not necessarily militate against this. It is true that quantitative determinations in the blood hormones are fraught with many uncertainties, and some authors discard the findings on this basis; but it is always possible that in these cases there was a premenstrual fall from a still higher level.

Other factors besides ovarian hormones are concerned in the production of menstrual bleeding.

Markee [1c] showed that the effect of "estrogen deprivation" is essentially local. After spaying an animal which had transplants in both eyes, he administered estrogen, which brought about the typical vascular rhythm and endometrial growth. Then he inserted a crystal of estradiol into one eye and stopped the subcutaneous injections of estrogen. The transplants in the other eye began to shrink and in due time menstrual bleeding occurred there and in the uterus. But in the eye that had the crystal, growth continued, and no menstrual changes were to be seen. After the end of the experimental menstruation the injections of estrogen were resumed, and growth was seen in all transplants. When the crystal was removed, menstruation was induced only in the treated eye, while the estrogen level in the circulating blood was sufficient to maintain growth in the transplants of the other eye.

All this may mean that the bleeding mechanism involves something more than reduction in ovarian products and raises the question of other factors.

Markee [1c] has presented evidence that as soon as regression has set in, the menstrual process is controlled within the endometrium itself. His hypothesis is that continued regression produces progressive buckling of the coiled arteries even in cycles with feeble growth. This retards the flow of blood superficially to such an extent that the mucosa is injured. As a result the tissue produces a vasoconstrictor to which the sphincters of the coiled arteries [5] are highly susceptible. They clamp down, and the resulting stasis brings on menstruation.

It may be that the reduction in hormonal levels activates a specific bleeding mechanism. The hypophysis as the source of such a factor seems to be ruled out.[11] Markee [1c] reported greater irregularity in the blush and blanch rhythm during the second growth period, and this supports the idea [16] that the same specific factor responsible for the rhythmic blanching also produces the protracted premenstrual blanching. In such a situation regression would be initiated when a definite threshold was reached. So far the hunt for a specific vasoconstrictor has failed. Brewer [17] presented evidence for a general vascular spasm premenstrually and suggested a substance resembling epinephrine as the agent. He attributed the premenstrual and menstrual changes to the gradual increase of such a vasoconstrictor in the blood.[18] Such a hypothesis assumes that in pregnancy the activated corpus luteum antagonizes the vasoconstrictor to such an extent that extravasation is confined to the region already damaged by the invading ovum.

Why should there be a periodic weakening of the superficial endometrium and an outpouring of blood? The most satisfactory explanation is that the process is an adaptation to provide nourishment and a foothold for the fertilized ovum during the period when the placenta is being established.[19]

9. The mechanism of menstruation is discussed at length by (*a*) Allen, Edgar; Hisaw, F. L., and Gardner, W. V., in Allen, Edgar; Danforth, C. H., and Doisy, E. A.: Sex and Internal Secretions, Baltimore, Williams & Wilkins Company, 1939. (*b*) Brewer, J. I.: Am. J. Anat. **61**: 429 (Sept.) 1937. (*c*) Corner.[9d] (*d*) Engle, E. T., and Smith, P. E.: Endocrinology **25**: 1 (July) 1939. (*e*) Hartman.[9b] (*f*) Hisaw, F. L.: Am. J. Obst. & Gynec. **29**: 638 (May) 1935. (*g*) Allen.[9c] (*h*) Hamblen, E. C.: Endocrine Gynecology, Springfield, Ill., Charles C. Thomas, Publisher, 1939.

10. (*a*) Corner, G. W.: Am. J. Physiol. **113**: 238 (Sept.) 1935. (*b*) Engle, E. T.: Am. J. Obst. & Gynec. **38**: 600 (Oct.) 1939. (*c*) Allen, Hisaw and Gardner.[9a] (*d*) Corner.[9d] (*e*) Engle and Smith.[9d] (*f*) Hisaw.[9f]

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13. Zuckerman, S.: Proc. Zool. Soc., London. s. B **123**: 441, 1937.

14. Fluhmann, C. F.: Menstrual Disorders: Pathology, Diagnosis and Treatment, Philadelphia, W. B. Saunders Company, 1939. Corner.[9a] Engle.[9b] Allen.[9a]

15. Fluhmann, C. F.: Endocrinology **20**: 318 (May) 1936. Fluhmann.[14]

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17. Brewer, J. I.: Am. J. Obst. & Gynec. **36**: 597 (Oct.) 1938.

18. Brewer, J. I.: The Menstrual Cycle, in Blumer, George: The Practitioner's Library of Medicine and Surgery, New York, D. Appleton-Century Company Inc., 1940.

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Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. HOWARD A. CARTER, Secretary.

GENERAL ELECTRIC LM-4 SUNLAMP ACCEPTABLE

Manufacturer: General Electric Company, Appliance and Merchandise Department, 1285 Boston Avenue, Bridgeport, Conn.

The General Electric LM-4 Sunlamp generates ultraviolet radiation within the limits of the standards set by the Council for devices using the term "sunlamp." These standards require that the energy of wavelengths shorter than and including 2,800 angstroms shall not exceed 1 per cent of the total energy of wavelengths between 2,804 and 3,132 angstroms. These wavelengths fall in the spectral region of low erythematogenic action and render the sunlamp suitable for unsupervised use by the layman.

The ultraviolet source is mounted in a reflector which is supported by an adjustable stand. This stand consists of a base where the "slow-break" switch is located and a tubular column holding a bracket which allows for a 30 inch height adjustment of the reflector. This reflector may be tilted at any angle. All the wires are concealed, and there is an 8 foot cord with a rubber plug. The maximum height of the unit is 60 inches.

The source of ultraviolet energy, the type S-4 bulb, consists basically of a quartz mercury arc about 1½ inches long, enclosed in a special glass bulb which transmits ultraviolet wavelengths of 2,894, 2,967, 3,024 and 3,132 angstroms (and longer wavelengths) but which cuts off most of the wavelengths shorter than about 2,800 angstroms. The lamp produces the characteristic blue green light of the mercury line spectrum. The total power required is 120 watts, the line voltage 110-120; the lamp operates only on alternating current.

Relative Spectral Intensities

Wavelength (Angstroms)	Relative Energy (Average of 3 Lamps)
3,132	7.96
3,024	2.59
2,967	1.15
2,894	0.28
2,804	0.09
Total	12.07

In information submitted by the firm it is stated that five minutes exposure is required for a minimum perceptible erythema at 30 inches, or sixteen minutes at 54 inches.

To light the lamp the electrodes must be cool. When the lamp has been operating and turned off, up to two minutes is required before it will resume operation. The firm states that under average home use the life of the S-4 bulb is enough for more than a year's service.

General Electric LM-4 Sunlamp.

The Council investigated the radiation characteristics of the source; in this investigation the lamp was placed close in front of the quartz-fluorite achromatic spectroradiometer, and the spectral intensities were measured with a vacuum thermopile. The relative spectral intensities (galvanometer deflections) corrected for absorption in the spectroradiometer are given in the accompanying table.

The radiation at 2,804 angstroms (and shorter if measurable) is about 0.75 per cent of the total of all wavelengths, including 3,132 and shorter. Mounted in an aluminum reflector the radiation at 2,894 angstroms and shorter, relative to the total, would be still lower; hence these lamps comply with the Council's requirements for acceptability of a sunlamp for spectral quality of ultraviolet radiation.

The Council voted to accept the General Electric LM-4 Sunlamp for inclusion on its list of accepted devices.

FISCHERTHERM MODEL 106-C-4 ACCEPTABLE

Manufacturer: The Fischer Corporation, 673-713 Ivy Street, Glendale, Calif.

The Fischertherm 106-C-4 is designed for use in medical and minor surgical diathermy. Standard equipment includes pad, cuff, induction cable, surgical accessories and foot switch. Air-spaced electrodes are also available. The apparatus is housed in a wood cabinet 42 inches high, 22 inches wide and 16 inches deep. The weight is approximately 140 pounds.

Fischertherm Model 106-C-4.

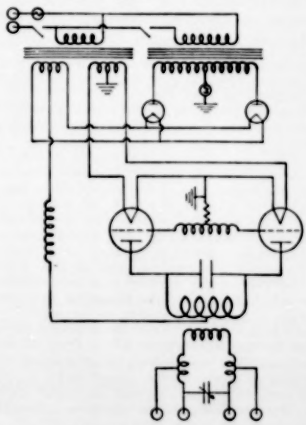
The apparatus provides a wavelength of 6 meters and utilizes two 354-C oscillating tubes and two rectifying tubes. It operates at 60 cycles, 115 volts.

In all the following tests, applications were given for twenty minutes and at an intensity corresponding to the patient's skin tolerance for heat. In applying the inductive cable, approximately 1½ inches of bath toweling was wrapped around the thigh and was held in place by approximately four turns of the inductive cable.

Results of Tests of Heating Tissue Submitted by the Firm

Technic	Deep Muscle, Degrees, F. Initial	Deep Muscle, Degrees, F. Final	Oral, Degrees, F. Initial	Oral, Degrees, F. Final
Pad	98.6	101.9	98.6	98.9
Cuff	98.9	104.8	98.7	99.2
Cable	98.6	104.0	98.5	99.1
Air-spaced disk	95.3	103.3	98.7	99.3

The Council's clinical investigation of the apparatus confirmed the firm's tissue heating tests.



Schematic diagram of circuit.

In order to determine the power output and the final transformer temperature, tests were conducted in a laboratory acceptable to the Council. The results of these tests are as follows:

Final transformer temperature (by resistance method)... 70.1 C.
(within the limits of safety prescribed by the Council)
Power output in watts..... 550 watts

The load was two 200 watt tungsten filament bulbs connected in parallel.

The Council on Physical Therapy voted to accept the Fischertherm 106-C-4 for inclusion on its list of accepted devices.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 22, 1941

THE MEDICAL STUDENTS MUST BE DEFERRED

At a joint conference which included the Committee on Medical Preparedness of the American Medical Association, the Subcommittee on Medical Education of the Health and Medical Committee of the Coordinator for Health and Welfare, and the Council on Medical Education and Hospitals of the American Medical Association, which was held in the headquarters of the American Medical Association in Chicago on February 15, it was determined, after extended discussion, to send the following telegram at once to Mr. Clarence A. Dykstra, Director of the Selective Service System, in Washington, D. C.:

1. Since the five year preparedness program of the government will require about three thousand five hundred medical graduates annually to enter the service of the Army, Navy and Public Health Service for a year's training, the education of physicians must be continued at the present level and without interruption.

2. This is so vital to military and general welfare that we urge the Director of Selective Service to make clear to draft and appeal boards that it is in the interest of the country to provide deferment of military service for students in good standing in approved medical schools who may be called for duty under the Selective Service Act until they shall have obtained the degree of doctor of medicine. The Committee on Medical Preparedness of the American Medical Association offers its facilities for the verification of the credentials and such other information as may be needed in connection with the application of any medical student for deferment.

3. In order to provide a continuing supply of qualified medical students for the medical schools of this country, we urge also that students who have been accepted for admission to approved medical schools in a period not to exceed twelve months preceding enrolment be granted deferment of military training in order that they may complete the requirement for admission to medical schools.

4. Suggestions that the number of medical students be increased can have no relationship whatever to the situation now confronting us because such an increase in the number of students admitted to medical schools during the current year could not in any way affect the number of doctors available for either military or civilian service before 1946. Such an increase of medical classes would surely tend to lower the quality of instruction and in the end cause a deterioration of medical service.

Evidence was presented at this meeting to indicate that the needs of the Army Medical Department for each of the five year training periods set up under the Selective Service Law will be for eight thousand medical officers from civilian life each year. This in itself will place a tremendous demand on our medical resources.

About five thousand two hundred young men graduate each year from our approved medical colleges, and every one of them must have at least one year of internship. Once the internship is completed, at least three thousand five hundred of these graduates will be needed to enter the services of the Army, Navy and Public Health Service for a year's training. Indeed, it is reasonable to believe that some serious adjustments will have to be made by hospitals during the next two years because of this requirement. Many of the institutions which now provide a one and one-half or two year general internship will have to be satisfied with one year of service.

Several suggestions have been made to meet the need that exists. Thus some have suggested that the number of medical students for the freshman year be increased at once by 10 per cent in all of our approved medical schools. As is pointed out in the statement sent to Mr. Dykstra, this would not provide a single competent medical man before 1946. Moreover, the suggestion fails to take into account several important facts: first, that our medical schools now have about all the students that they can carry with the available faculty, facilities and equipment; second, practically every boy who is really competent to undertake the type of medical education required in an approved medical school now gains admission. The fact that some eight hundred who enter medical school fail to complete the course is an indication of the difficulties raised by the modern medical curriculum. Third, the faculties themselves are being placed in the pool of medical men available for positions as medical officers with troops and for the staffs and chiefs of service in the new Army hospitals, which will within the next year or two be increased by fifty thousand additional beds.

Almost preposterous is the strange suggestion emanating from some leaders in Washington that only third and fourth year medical students and interns be deferred. When it is realized that there is a constant and definitely anticipated loss of men from the medical schools from the day of first enrolment to the day of graduation, it can be recognized that any depletion of available medical students from the moment when they are accepted for entrance into medical school until they have finally completed their internship will be hazardous in times like these.

Several plans have been suggested for obviating the fact that the Selective Service Law does not provide for blanket deferment of any particular group. First, there is the possibility of amendment of the law. The medical profession does not ask this. Recognizing that blanket deferment of medical students would raise at

once the question of deferment of men who are studying medicine in schools conducted by medical cults and in schools of inferior grade, the medical profession is content with the concept that deferment may be secured if the Director of the Selective Service will make clear to draft and appeal boards that it is in the interest of the country to provide deferment of military service for medical students in good standing in approved medical schools. No one is asking exemption for these boys. All that is being asked is deferment until they shall have obtained the degree of doctor of medicine, when the vast majority of them may be depended on to take at once a year of medical military training and to be thereafter available in the organized medical reserve corps. The law does provide that persons in essential occupations for the maintenance of the public health and security may be deferred. Any policy which permits a single qualified student in an approved medical school to be taken out of that training and put into other military service is indication of a lack of foresight and of a failure to appreciate the actual needs of the nation in this emergency.

INDUCED THIAMINE DEFICIENCY IN MAN

Most of the experimental work on the role of the various food factors in nutrition has been necessarily carried out on animals. Accurate descriptions of the symptoms which result from uncomplicated vitamin deficiencies in experimental animals are available, while comparable information bearing on human beings is often lacking or is incomplete. Although the knowledge gained from animal experimentation has contributed immeasurably to our understanding of the role assumed by various vitamins in human nutrition, investigations of this type alone cannot yield all the desired information. Recently experimental studies have been made in which human beings have served as subjects. Although such investigations are difficult, they are amply justified in view of the great practical value of the results.

Many investigators have studied the experimental production of a deficiency of thiamine in man. Jolliffe and his associates,[1] for instance, maintained several subjects for a number of days on diets that were partially deficient in thiamine and were probably adequate in all other dietary essentials. The report on this study embodied a description of the disturbances encountered in the experimental subjects and contained useful information on the relationship between urinary excretion and intake of thiamine. Much additional information relative to the symptoms of thiamine deficiency in human subjects has been afforded by the extensive investigations of Williams and his associates.[2] The most recent report by these investigators is particularly worthy of attention because it not only furnishes more accurate information on the results of uncomplicated vitamin B_1 deficiency in man but also raises questions concerning the etiology of some of the common symptoms of beriberi and the requirement of this food factor.

In the latest experiments of Williams and his co-workers a number of persons were given a diet deficient in thiamine for a period of almost three months. The degree of debility induced by the withdrawal of thiamine from the diets of these persons was impressive; fatigue, lassitude and loss of interest in food developed early and increased progressively as the period of deficiency was extended. The time of development of severe symptoms was not the same for all and seemed to be related to physical activity, the more active subjects developing symptoms earlier. Depressed mental states, generalized weakness, dizziness, backache, soreness of muscles, dyspnea, insomnia, anorexia, nausea, vomiting, loss of weight, slight roughness of the skin and atony of muscle were encountered. Faint heart sounds, lowered blood pressure and bradycardia when at rest, and tachycardia and sinus arrhythmia on exertion were likewise observed. Changes in the size of the heart were not found in any case, nor was edema observed. The concentration of plasma proteins remained within normal limits in all cases, as did the values for calcium and phosphorus in the serum. Neither anemia nor cheilosis was present, but capacity for muscular work fell progressively. Also of interest was the development of electrocardiographic abnormalities, which consisted in the diminution of the amplitude of all complexes and particularly of the T waves of the chest leads.

These observations on the effects of uncomplicated thiamine deficiency in man are of unusual interest and importance. While edema, cardiac dilatation and peripheral pain are often encountered in beriberi, these symptoms were entirely lacking in the disease induced by restricting the dietary intake of thiamine. In view of their observations, Williams and his associates have been led to question whether a deficiency in thiamine alone is responsible for the classic features of beriberi. The investigators point out that the early stage of the disease induced by restricting the intake of thiamine closely resembles neurasthenia, while the later stage is similar to anorexia nervosa. This conclusion, of course, does not imply that all the patients with conditions diagnosed as neurasthenia can be shown to be suffering from thiamine deficiency. Indeed, it is possible that only a small percentage of such conditions is of nutritional origin, although it is likewise possible that the number is large. On the basis of their experi-

1. Jolliffe, Norman; Goodhart, Robert; Gennis, Joseph, and Cline, J. K.: The Experimental Production of Vitamin B_1 Deficiency in Normal Subjects: The Dependence of the Urinary Excretion of Thiamine on the Dietary Intake of Vitamin B_1, Am. J. M. Sc. **198**: 198 (Aug.) 1939.

2. Williams, R. D.; Mason, H. L., and Smith, B. F.: Induced Vitamin B_1 Deficiency in Human Subjects, Proc. Staff Meet., Mayo Clin. **14**: 787 (Dec. 13) 1939. Williams, R. D.; Mason, H. L.; Wilder, R. M., and Smith B. F.: Observations on Induced Thiamine (Vitamin B_1) Deficiency in Man, Arch. Int. Med. **66**: 787 (Oct.) 1940.

mental results, Williams and his associates suggest that thiamine deficiency, as it exists in sections where beriberi and pellagra are uncommon, should be looked for principally in that group of patients whose condition has been diagnosed as neurasthenia.

In the experiments of Williams and his collaborators a dietary supply of 0.95 mg. of thiamine (285 U. S. P. units) was not associated with evidence of nutritional deficiency in the persons studied. Nevertheless, this amount was apparently not adequate for the best nutritional state of the patient, for greater allowances of thiamine resulted in an increase in alertness and attentiveness of experimental subjects and permitted a more satisfactory performance of these subjects with an exercising device. Unfortunately, this conclusion was based on limited experimental data; an extension of this phase of the investigation would be of great practical value. Experiments carried out during the winter and summer seasons indicated that symptoms of thiamine deficiency developed earlier among those whose diets were restricted during the winter months. This indication that a climatologic factor may influence the rate of development of evidence of thiamine deficiency would also seem to merit further study.

The type of investigation discussed in the foregoing paragraphs furnishes a more exact knowledge of the symptoms encountered as a result of the lack of particular dietary ingredients. A deficiency disease such as pellagra, scurvy or beriberi, as observed clinically, does not ordinarily represent an uncomplicated deficiency of a single dietary factor. It is only by controlled experimental investigations that the precise role of any particular vitamin in human nutrition can be determined.

Current Comment

HISTOPLASMOSIS

At relatively infrequent intervals since 1905, cases of histoplasmosis have been reported in the American literature. In that year Samuel Taylor Darling described three cases with a clinical picture somewhat similar to kala-azar but with tissues containing the organism which he named Histoplasma capsulatum. In a recent review of the subject Meleney[1] discusses thirty-two cases of the disease, thirteen of which have not yet been reported in the literature and twenty-two of which were recorded in the continental United States. The disease should be suspected, Meleney points out, in patients presenting a wide variety of clinical symptoms and signs. Any condition characterized by enlargement of the liver and spleen, by generalized or regional enlargement of the lymph nodes, by an aplastic or undiagnosed secondary type of anemia or leukopenia, by generalized or localized abscesses or ulcers of the skin or by chronic pulmonary infections should lead one to suspect histoplasmosis. In advanced systemic infections the organisms may be found in thin smears of the peripheral blood or in dehemoglobinized thick drops similar to those used for the diagnosis of malaria. Spleen, liver, lymph node or sternal puncture may reveal the organisms and a careful examination of sputum may show their presence. Animal inoculation and cultivation have been of diagnostic value. Therapy has not proved especially effective but Meleney believes that antimony preparations should receive particular attention. The disease appears to be widely distributed throughout the world and will doubtless be recognized with increasing frequency in the future. Its close resemblance to kala-azar in clinical symptomatology presents a problem which requires considerable diagnostic acumen to penetrate.

1. Meleney, H. E.: Histoplasmosis (Reticulo-Endothelial Cytomycosis): A Review, Am. J. Trop. Med. **20**: 603 (July) 1940.

COLD PREPARATIONS UNDER COLD SCRUTINY

On February 3 W. G. Campbell, Commissioner of Food and Drugs of the Food and Drug Administration, notified all manufacturers of "cold" preparations that henceforth this class of products will be included in the administration's program of operations. The announcement pointed out that present day medical opinion supports the view that there is no known substance or mixture of substances which can be relied on to prevent or cure colds; further, that surveys of products which now appear on the market show that many of them make claims that involve the treatment or prevention of colds which are not justified by the scientific facts, while others exaggerate the effects which the medications will have on the symptoms; and finally, now that section 201 (n) of the Food, Drug and Cosmetic Act is fully effective, in the opinion of the administration any reference to colds in the labeling of a drug should clearly indicate just what the effects of the medicine with respect to this disease condition will be and, if necessary to avoid misunderstanding, just what the limitations of the medication are. The commissioner bases this on the fact that section 201 (n) requires that the label reveal any facts that are material in the light of such affirmative representations as the label may make. By way of explanation, the notice includes a statement to the effect that, for various reasons, one of which has been lack of adequate facilities, the Food and Drug Administration has not in the past given attention to the large number of preparations sold for the treatment or prevention of colds or for the mitigation of the symptoms of this disease, but that henceforth this class of products will be included in the administration's program of operations. Recently THE JOURNAL called attention to the promotion of one line of these preparations in which it was suggested that the druggist prescribe such items for the treatment of the active cold. This illustrated the extent to which manufacturers of these preparations have gone in promoting them to the public. Now that the Food and Drug Administration has determined to review the claims made it will be exceedingly interesting to watch the changes which will take place in the claims which are made for many of these preparations.

MEDICAL PREPAREDNESS

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medical preparedness, and such other information and announcements as will be useful to the medical profession.

PLANS FOR COORDINATION

Federal Security Administrator Paul V. McNutt has announced appointment of an interdepartmental advisory committee, composed of officials of various federal agencies working in the fields of health and welfare, to assist and advise him in coordinating all health, medical care, welfare, nutrition, recreation and related activities affecting national defense.

The administrator said that the field staffs of various governmental agencies would also play an important part in securing effective coordination of these programs. He explained that he had established twelve federal regional advisory councils made up of the field representatives of all federal agencies participating in these activities and that he had designated the twelve regional directors of the Social Security Board as regional defense coordinators.

These coordinators, he said, will act as chairmen of the regional advisory councils and maintain the relationships in these fields with the state defense councils in their respective regions.

Mr. McNutt declared that he was now setting up a small staff within his office to assist him and Assistant Coordinator Charles P. Taft to coordinate health and welfare and related defense activities. This staff is headed by Miss Gay Shepperson, former work project administrator for Georgia.

The federal agencies and their representatives composing the interdepartmental advisory council include Arthur Altmeyer, chairman, Social Security Board; Aubrey Williams, administrator, National Youth Administration; J. J. McEntee, director, Civilian Conservation Corps; J. W. Studebaker, director, Office of Education; Dr. Warren Draper, Acting Surgeon General, Public Health Service; C. B. Baldwin, administrator, Farm Security Administration; M. L. Wilson, director, Extension Work; Milo Perkins, administrator, Surplus Marketing Administration; Dr. Louise Stanley, chief, Bureau of Home Economics; John M. Carmody, administrator, Federal Works Agency; Howard O. Hunter, acting commissioner, Work Projects Administration; Frances Perkins, secretary of labor; Katherine Lenroot, chief, Children's Bureau; Conrad Wirth of the National Park Service; Harold W. Breining, assistant administrator, Veterans Administration; Charles W. Eliot, director, National Resources Planning Board, and the following members from the Advisory Commission to the Council of National Defense: Frank Bane, director, Division of State and Local Cooperation; Charles Palmer, housing coordinator; J. B. Hutson, agriculture division; Sidney Hillman, labor division, and Harriet Elliott, Consumer Protection Division.

ASSISTANCE OF THE AMERICAN MEDICAL ASSOCIATION IN CLASSIFICATION AND PROCUREMENT OF PHYSICIANS FOR MILITARY SERVICE

The Adjutant General of the Army has sent the following instructions to the Surgeon General and to each corps area and department commander:

1. The following plan has been approved and will be placed in operation at such time as the War Department may direct.

(*a*) The American Medical Association will prepare and maintain a roster of civilian physicians, classified as to professional specialties and proficiency, who have agreed to accept commissions in the Army of the United States when needed for immediate active duty during a national emergency.

(*b*) The Surgeon General will designate one or more medical officers of the Regular Army who will be placed on duty at Headquarters, Sixth Corps Area, as representatives of his office in all matters pertaining to the Medical Corps Reserve and the American Medical Association.

(*c*) Corps area commanders will report, at times specified by the War Department, the number of Medical Corps Reserve officers under their assignment jurisdiction who are available for active duty.

(*d*) Vacancies in allotments made to any corps area by the War Department that cannot be filled by the detail of a qualified Reserve officer under the assignment jurisdiction of the corps area commander will be promptly reported to the War Department, which will cause them to be filled from Medical Corps Reserve officers in the Army and Service Assignment group, or by adding these vacancies to the allotment of other corps areas having a surplus.

(*e*) If no qualified Reserve officer can be found, the Surgeon General will notify his representative at Headquarters, Sixth Corps Area, as to the qualifications desired and the location and grade of the vacancy. The representative will then secure recommendations from the American Medical Association and forward all information to the appropriate corps area commander, notifying the War Department of the action taken. The corps area commander will immediately cause the candidate to be given a physical examination and, if found qualified, will secure from the applicant a properly completed application for commission (W. D., A. G. O. form 170). All papers will then be forwarded to the Adjutant General for final action by means of air mail and "Immediate Action" stationery when necessary.

(*f*) Corps area commanders are not authorized to grant waivers for physical defects in these instances but may reject a candidate when found physically disqualified, notifying the Adjutant General of the action taken.

(*g*) On receipt of a properly executed oath of office, the corps area commander will cause orders to be issued placing the appointee on immediate active duty.

(*h*) No appointments will be made under this authority of applicants over 55 years of age.

(*i*) The appearance of the candidate before an examining board as prescribed in AR 140-5 will be waived in these cases.

2. The Surgeon General and corps area and department commanders will complete all arrangements necessary to place the plan in operation without delay when directed by the War Department.

ROTATION OF NATIONAL GUARD AND RESERVE MEDICAL DEPARTMENT OFFICERS

The Adjutant General of the Army has sent the following memorandum to the commanding generals of all armies and the commanding generals of all corps areas:

1. On receipt of individual applications and with the approval of all commanders concerned, Reserve and National Guard Medical Department officers, after approximately six months' duty with its fixed installations, may be afforded an opportunity to attend a one month refresher course at the Medical Field Service School with a view to subsequent assignment to medical field or tactical units. Subject to the same conditions, Reserve and National Guard Medical Department officers, after approximately six months' duty with field or tactical units, may receive a one month refresher course at certain general hospitals, with subsequent assignment to fixed medical installations.

2. Subject to the approval of all commanders concerned, Medical Department commissioned personnel may be rotated within regimental medical detachments and between regimental medical detachments and medical battalions, squadrons and regiments.

3. However, the procedure authorized in paragraphs 1 and 2 must not interfere with or be detrimental to the balanced training of National Guard units, so prescribed that they may be prepared to take the field on short notice.

NEW INSTRUCTIONS GOVERNING PHYSICAL EXAMINATIONS FOR RESERVE AND NATIONAL GUARD OFFICERS

Additional instructions governing the physical examination of reserve officers and National Guard officers ordered to active duty for periods of more than thirty days were announced on January 17 by the War Department.

According to the new instructions, only one examination is prescribed or authorized for each officer to determine his physical qualification for extended active duty. This examination, however, carries with it the right of appeal in certain cases. It may be given not more than sixty days prior to the effective date of each officer's active duty or after he has reported for such active duty, subject to the following provisions:

1. Examination prior to actual entry on active duty will be made at the option and on the request of the individual concerned, and without expense to the federal government for travel or pay.

2. A National Guard officer not examined prior to induction, as authorized, will be examined at the earliest practicable date following induction. If it is not practicable to give such an examination before he departs from his home station, the examination will be deferred until his arrival at his unit training center or other station where the necessary medical personnel and facilities are available, and in any event within the first thirty days of active duty. In such cases the commanding general of the corps area or department of origin will notify the army commander concerned, who will arrange with the commanding general of the corps area or department of destination for the necessary examination.

3. A reserve officer not examined prior to entry on active duty will be ordered to active duty without a prior physical examination. If he is to be permanently assigned to a station in his corps area or department of residence not more than 500 miles distant from his home, and if his station has the necessary medical personnel and equipment to make physical examinations of the type prescribed by army regulations, he will be ordered to proceed directly to his permanent station where the physical examination will be given. If the officer's first permanent assignment is to be (*a*) a station outside the corps area or department of his home, (*b*) a station more than 500 miles from his home or (*c*) a station within the corps area or department of his home but one at which personnel and equipment required for physical examination are not available, he will be assigned to his permanent station but ordered to proceed on temporary duty to the nearest army station, where the physical examination prescribed by army regulations can be made; if found physically qualified, he will then proceed to his permanent station in compliance with original orders. In any event, the physical examination shall be completed within the first thirty days of active duty.

To be acceptable, examinations prescribed by army regulations, whether made prior to or after entry on active duty, must be made at an army medical installation where professional specialists and proper facilities are available for complete physical examination.

The examinations prescribed by army regulations will be made by boards of three or more medical officers, at least one of whom shall be an officer of the Medical Corps of the Regular Army. If practicable, in the examination of National Guard officers at least one member of the board will be a medical officer of the National Guard of the United States and, if practicable, in the examination of reserve officers at least one member of the board will be a reserve medical officer.

Physical standards for all active duty are those prescribed in AR 40-100, AR 40-105 and, in addition, for the Air Corps in AR 40-110, except as modified for certain officers of the National Guard who were commissioned or examined and found qualified for federal recognition or appointment in the National Guard of the United States prior to July 2, 1940.

Examination to determine physical qualification for extended active duty will include a roentgenogram of the chest, a serologic test for syphilis and a urine examination, including microscopic examination. An electrocardiogram will be made if the officer is 50 years of age or older, if the officer is 45 years of age or older and is required by assignment or orders to participate regularly in airplane flights, or if in the opinion of the medical examiner such examination is indicated.

Corps area and department commanders except in cases expressly reserved by the War Department are authorized to make final determination of the physical qualification of individual officers without reference to the War Department, except in cases involving physical fitness for flying. Action in the latter cases will be as prescribed in AR 40-110.

They are authorized also to grant waivers for physical defects when the interest of the government or of the military service is not compromised, provided the defects will not interfere with the satisfactory performance of duties appropriate to the grade of the individual concerned and are not likely to be aggravated as a result of active military service. In certain other cases waivers will be granted only on the written request of the affected individual, and in such cases pertaining to National Guard officers the recommendation of the division or separate unit commander concerned will also be necessary. Each request for the latter type of waiver must be accompanied by an affidavit from the individual concerned acknowledging that the physical defects on which waiver is requested existed prior to entry into active military service, and that they were not the result of such service.

Only the War Department and corps area and department commanders are authorized to adjudge an officer physically disqualified for extended active duty, and only these authorities may authorize his relief from extended active duty for physical disqualification. Similarly, only these authorities may adjudge an officer physically qualified for active duty.

National Guard officers found to be disqualified as a result of physical examination prior to induction, and whose federal recognition is not withdrawn by that date, will be relieved from active duty on the effective date of such induction, on orders issued by the corps area or department commander.

If found to be disqualified as a result of physical examination subsequent to induction, National Guard officers will be relieved from active duty on determination of disqualification, on orders issued by the army, corps area or department commander.

If found to be physically disqualified, National Guard officers thereupon become subject to withdrawal of federal recognition and termination of commission in the National Guard of the United States. Such withdrawal and termination will be accomplished by the War Department.

Reserve officers found to be physically disqualified as a result of physical examination prior to the effective date of active duty, will not be ordered to extended active duty. If found to be physically disqualified as a result of physical examination subsequent to the effective date of active duty, they will be returned to their homes and relieved from active duty.

An officer already on extended active duty who is reported as physically disqualified by the board which conducted the examination of the type specified by army regulations will be retained on active duty pending decision on appeal, if request for appeal is made, or on request for waivers, if any.

To handle appeals, each corps area and department commander will convene as many medical appeal boards as he deems necessary. Such boards will consist of two or more medical officers of mature experience and judgment, other than those comprising the examination boards convened according to army regulations to physically examine officers.

If the physical examination of the type prescribed in army regulations discloses disqualifying defects, the officer will be so informed by the corps area or department commander in whose jurisdiction the National Guard or reserve officer was examined. This notice will announce the specific defects which indicate that the officer is physically disqualified for active duty. He will be advised in the same communication of his

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right to appeal from the findings of the board which conducted the physical examination, provided, if the officer is not on extended active duty, that he is willing to defray from personal funds the cost of travel involved in appearing before the appeal board and his subsistence in hospital, if hospitalization is involved in the appeal examination.

In considering appeals, a medical appeal board will limit its examination to the disqualifying defects reported by the examining board. Medical appeal boards are without authority to extend their examinations beyond these defects. When practicable, applicants will be ordered before an appeal board at a hospital or dispensary other than the one in which they were originally examined.

The right of appeal is retroactive to include all National Guard and reserve officers who have been found to be disqualified physically for extended active duty since Sept. 6, 1940, provided, if the officer is now on an inactive status, that the reexamination be made without expense to the government for travel and pay, and provided, further, that the individual concerned has not subsequently been discharged from the National Guard of the United States or the Officers' Reserve Corps, as the case may be.

Except as to flying officers and as to officers whose cases have been expressly reserved by the War Department, action of the corps area or department commander on recommendations of medical appeal boards will be final.

A reserve officer who receives a physical examination of the type prescribed by army regulations prior to the effective date of his extended active duty, and who reports for active duty within sixty days thereafter, will be given a physical examination, as required by Public Resolution 96, Seventy-Sixth Congress, to determine defects arising from intervening illness or injury since the prior complete examination.

Each such examinee will exhibit to the medical examining board his copy of the report of prior examination and will also furnish the board a certificate in duplicate that he has or has not suffered an illness or injury since the date of the prior examination. The certificate will indicate in detail the nature and extent of any intervening illness or injury.

When required, examinations to determine physical defects arising from intervening illness or injury will be made at the earliest practicable date after the officer concerned has arrived at his permanent station, and in any event within the first thirty days of active duty. Such examinations will be made by one or more medical officers of the Army of the United States.

An officer, examined within sixty days prior to actual entry upon active duty, and found physically qualified for such duty, will not be relieved from or rejected for active duty because of anything found in the examination to determine intervening disease or injury, except as follows:

If, because of intervening illness or injury, the officer concerned is unable to report in person to the place designated in his active duty or induction orders, he will be examined at the place where he is confined by illness or injury. Final disposition of the cases of such officers will be made by corps area and department commanders after consideration of the report of the medical officer or medical board who conducted the examination. The same examination shall be made and the same action taken with respect to an officer, previously not examined, who because of injury or illness is unable to report to the station and at the time indicated in the orders directing his extended active duty.

If the officer who has reported in person to the designated place for active duty is considered to have a disqualifying defect, he will be ordered to an army general hospital, and if found thereafter by a disposition board to be physically disqualified for active duty, he will be relieved from active duty by the corps area or department commander, or, in appropriate cases he will, on approval of the War Department, be brought before an army retiring board in accordance with the provisions of the Act of April 3, 1939. If approved findings of the disposition board determine that the officer is physically qualified for active duty, he will be ordered to his organization for duty.

SURGEON GENERAL'S OFFICE MOVED

The office of the Surgeon General of the Army has just been moved from the War Department Annex No. 1 at 401 Twenty-Third Street N.W., Washington, D. C., to the Social Security Building, Fourth and C streets S.W., where the offices of the Ordnance Department are located.

NEW COMMANDANT AT NAVY MEDICAL CENTER

Rear Admiral Charles M. Oman, Medical Corps, U. S. Navy, has been assigned to command the Navy Medical Center in Washington, D. C., relieving Rear Admiral Harold W. Smith, who takes over the duties of inspector of medical activities for the Atlantic Coast, with station in the Bureau of Medicine and Surgery in Washington.

EIGHTEEN BRANCHES OF SCHOOL OF AVIATION MEDICINE

The War Department has established at various Air Corps stations in the United States, Hawaii and the Panama Canal Zone eighteen branches of the School of Aviation Medicine at Randolph Field, Texas. Branches were established to provide the practical training of officers of the medical reserve corps who have satisfactorily completed the extension course of the School of Aviation Medicine and who are candidates for graduation as aviation medical examiners. The central School of Aviation Medicine at Randolph Field was founded to train medical officers in the principles of examination of aviators and in the aviation specialties such as ophthalmology, cardiology and neuropsychiatry, and in the administration of the medical department as related to special requirements of the Air Corps.

CONTRIBUTIONS FOR MEDICAL SUPPLIES FOR GREECE

Dr. Haven Emerson, New York, chairman of the American Physicians Committee to Aid Greece, said on January 29 that shipments of medical supplies to Greece will have to be stepped up if a major health calamity is to be avoided in that country. A dispatch from the executive officer of the American Red Cross in Greece, Charles A. House, who had made a tour of the regions behind the front, reported that, while local authorities were doing everything in their power to care for the sick and wounded, the scope for further aid from America was enormous and all manner of surgical equipment was badly needed. Dr. Emerson said there has been a decided falling off in the last few weeks in the amount of contributions received for sending medical and surgical supplies to Greece and that during the last week the Medical and Surgical Supply Committee of America, 420 Lexington Avenue, New York City, had shipped only $7,368 worth of such supplies to Athens, as compared to previous shipments of over $10,000 each.

INDUSTRIAL HYGIENE PROGRAMS AND UNITS

The Division of Industrial Hygiene of the U. S. Public Health Service is preparing to assist in the prevention and control of health hazards in government arsenals and navy yards. The Surgeon General has authorized the Division of Industrial Hygiene to employ additional personnel to organize industrial hygiene programs and to train personnel within these military establishments to carry out the programs.

The Surgeon General has also authorized the Division of Industrial Hygiene to assign several units, each consisting of a doctor and an engineer, to cooperate with state industrial hygiene units in giving special attention to airplane and munitions plants and to shipyards. The Vermont unit is now receiving assistance in the investigation of health problems which have arisen in the machine tool industry as a result of inadequate housing, long hours of work and certain foundry hazards. State industrial hygiene units are urged to inform the Division of Industrial Hygiene of their most immediate defense problems and to make suggestions which may be helpful to other units.

ARMY RESERVE OFFICERS ORDERED TO ACTIVE DUTY

SECOND CORPS AREA

The following additional medical reserve corps officers had been ordered to active duty by the Commanding General, Second Corps Area, up to February 7. The Second Corps Area comprises the states of New York, New Jersey and Delaware.

BANDES, Joseph, 1st Lieut., New York, Fort Dix, N. J.
BRODEY, Adrian, 1st Lieut., Far Rockaway, N. Y., Carlisle Barracks, Pa.
COHEN, William, 1st Lieut., Trenton, N. J., Fort Benning, Ga.
CORWIN, Emanuel M., 1st Lieut., New York, Fort Hamilton, N. Y.
DELNEGRO Albert E., 1st Lieut., Newark, N. J., Savanna Ordnance Depot, Savanna, Ill.
DIENER, Samuel, 1st Lieut., Newark, N. J., Fort Benning, Ga.
DUTTO, Bartholomew J., 1st Lieut., Kingston, N. Y., Camp Livingston, La.
ENGLE, Jerome W., 1st Lieut., Yonkers, N. Y., Fort Dix, N. J.
EVANS, Alexander L., 1st Lieut., Willard, N. Y., Fort Ontario, N. Y.
GILNER, Abraham, 1st Lieut., New York, Fort Constitution, N. H.
GIORGINI, Gino L., 1st Lieut., Copiague, N. Y., Fort Dix, New Jersey.
GLICK, Louis J., 1st Lieut., New Rochelle, N. Y., Fort Dix, N. J.
GOODWIN, Edward M., 1st Lieut., New York, Fort Hamilton, N. Y.
KOLBE, Joseph T., 1st Lieut., Mount Vernon, N. Y., Camp Upton, N. Y.
KOPET, Sidney J., 1st Lieut., Brooklyn, Camp Livingston, La.
LEIDER, Sydney, 1st Lieut., Brooklyn, Fort Devens, Mass.
LEVER, Shelby M., 1st Lieut., Brooklyn, Fort Devens, Mass.
LITTER, Leo, 1st Lieut., New York, Fort Hancock, N. J.
MAISEL, Irving, 1st Lieut., Newark, N. J., Savanna Ordnance Depot, Savanna, Ill.
MARKOWITZ, Isidor, Captain, Brooklyn, Army Recruiting Station, Newark, N. J.
METZ, Henry, 1st Lieut., Hackensack, N. J., Fort Dix, N. J.
OFFENKRANTZ, Frederick M., 1st Lieut., Newark, N. J., Fort Jay, N. Y.
ORANSKY, Marvin, 1st Lieut., Newark, N. J., Fort Benning, Ga.
PIERCE, Henry A., 1st Lieut., Leonia, N. J., Fort Dix, N. J.
RUGGIERO, Wilfred F., 1st Lieut., New York, Carlisle Barracks, Pa.
SCHMIESING, Clifford A., 1st Lieut., Salamanca, N. Y., Fort Niagara, N. Y.
SCHWARTZ, Louis, 1st Lieut., New York, Fort Devens, Mass.
SHAPIRO, Morris A., 1st Lieut., Schenectady, N. Y., West Point, N. Y.
TURANO, William M., 1st Lieut., New York, Fort Hamilton, N. Y.
WARRES, Herbert L., 1st Lieut., Brooklyn, Fort Devens, Mass.
WEISS, Henry W., 1st Lieut., Ellenville, N. Y., Fort Devens, Mass.

FOURTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Fourth Corps Area, which comprises the states of Tennessee, North Carolina, South Carolina, Alabama, Georgia, Mississippi, Florida and Louisiana:

BARNES, Justus M., Captain, Montgomery, Ala., Camp Wheeler, Ga.
BELL, Francis E., 1st Lieut., Palatka, Fla., Camp Davis, N. C.
BILLINGHURST, George A., 1st Lieut., Milledgeville, Ga., Camp Wheeler, Ga.
BOSTICK, John N., 1st Lieut., Gilbert, La., Camp Wheeler, Ga.
BOWEN, Lucius M., 1st Lieut., Waverly, Tenn., Fort Bragg, N. C.
BROWN, Harry G., 1st Lieut., Natchez, Miss., Camp Wheeler, Ga.
CRANKSHAW, Daune W., Major, Burton, N. C., Fort Benning, Ga.
DIETRICH, Julius, 1st Lieut., Crossville, Tenn., Camp Forrest, Tenn.
DUSENBERRY, James F., 1st Lieut., Laurens, S. C., Fort Jackson, S. C.
EDWARDS, Franklin D., Captain, Columbus, Ga., Camp Wheeler, Ga.
FOLSOM, Charles W., 1st Lieut., Miami, Fla., Camp Wheeler, Ga.
GALLIS, Anthony H., 1st Lieut., Atlanta, Ga., Fort Benning, Ga.
GOLDEN, William C., 1st Lieut., Clanton, Ala., Camp Davis, N. C.
HAMILTON, Andros S., 1st Lieut., Monore, La., Camp Claiborne, La.
HOUSER, Frank M., 1st Lieut., Macon, Ga., Camp Wheeler, Ga.
JORDAN, Henry C., Captain, Robertsdale, Ala., Fort Bragg, N. C.
KISNER, Wendell H., 1st Lieut., Baton Rouge, La., Camp Croft, S. C.
LAMAR, Carlos A. P., 1st Lieut., Miami, Fla., Camp Wheeler, Ga.
MANNING, William S., Lieut. Col., Jacksonville, Fla., Jacksonville, Fla.
MILLING, Chapman J., 1st Lieut., Columbia, S. C., Fort Jackson, S. C.
MITCHELL, William B., 1st Lieut., Trion, Ga., Fort McClellan, Ala.
NEW, James S., 1st Lieut., Milledgeville, Ga., Camp Davis, N. C.
POOLE, Everett B., Captain, Greenville, S. C., Camp Croft, S. C.
RINAMAN, Jarrett C., Captain, Miami, Fla., Camp Wheeler, Ga.
ROBINSON, Melvin D., 1st Lieut., Greenwell Springs, La., Camp Croft, S. C.
SMITH, James S., Captain, Miami, Fla., Camp Wheeler, Ga.
SNELLING, William R., 1st Lieut., Columbus, Ga., Fort McClellan, Ala.
STAMM, Joseph, 1st Lieut., New Orleans, Camp Wheeler, Ga.
TISDALE, Albert A., 1st Lieut., LaFayette, La., Camp Croft, S. C.
TUGWELL, Wilton E., 1st Lieut., Pensacola, Fla., Fort Bragg, N. C.
WILLIAMS, Charles R., 1st Lieut., Wadley, Ga., Camp Croft, S. C.
WILSON, Richard A., 1st Lieut., Wilmington, N. C., Fort Devens, Mass.
WITHERINGTON, Albert S., Jr., 1st Lieut., DeQuincy, La., Camp Wheeler, Ga.

Orders Revoked

The following officers, previously reported, have been relieved from duty or their orders have been revoked:

BATES, Thomas H., Major, Lake City, Fla.
FISHER, Roy A., Jr., 1st Lieut., Knoxville, Tenn.
GIBSON, Rae B., 1st Lieut., Greeneville, Tenn.
GOLDEN, William C., 1st Lieut., Clanton, Ala.
GRIFFIN, James C., 1st Lieut., Tampa, Fla.
LEA, Joseph D., 1st Lieut., Baton Rouge, La.
NEILL, Francis K., 1st Lieut., Albany, Ga.
NUNGESTER, Garrold H., 1st Lieut., Decatur, Ala.
PALMER, Yates S., 1st Lieut., Valdese, N. C.
WARD, Albert L., 1st Lieut., Fort St. Joe, Fla.
WORLEY, Wyeth B., 1st Lieut., Shreveport, La.

SIXTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Sixth Corps Area. The Sixth Corps Area comprises the states of Wisconsin, Illinois and Michigan.

ALBAUM, Joseph, 1st Lieut., Lincoln, Ill., Illinois Induction Board.
ALLEN, Elmer S., 1st Lieut., Arcola, Ill., 2d Medical Battalion, Fort Sam Houston, Texas.
APPEL, Ben Arthur, 1st Lieut., Standish, Mich., Illinois Induction Board.
BARON, Benzoin C., Captain, Munising, Mich., Armored Forces, Fort Benning, Ga.
BENSON, George, 1st Lieut., Richlard Center, Wis., Armored Forces, Fort Benning, Ga.
BERNSTEIN, Max M., 1st Lieut., Chicago, Station Hospital, Camp Grant, Ill.
BOALS, Robert T., 1st Lieut., Detroit, William Beaumont General Hospital, El Paso, Texas.
BROSIN, Henry W., 1st Lieut., Chicago, Station Hospital, Fort Custer, Mich.
CARY, Erwin C., Captain, Reedsville, Wis., Armored Forces, Fort Benning, Ga.
DEL BECCARO, Edward V., Major, Chicago, Station Hospital, Fort Sam Houston, Texas.
DROEGE, Edward H., Captain, Granite City, Ill., Armored Forces, Fort Benning, Ga.
FAVUS, Irving, 1st Lieut., Chicago, 61st C. A., Fort Sheridan, Ill.
FELDMAN, Emanuel, 1st Lieut., Bayonne, N. J., 5th Division, Fort Custer, Mich.
FELDMAN, Harold, Captain, Pekin, Ill., Armored Forces, Fort Benning, Ga.
FILEK, Allan, Captain, Green Bay, Wis., Armored Forces, Fort Benning, Ga.
FISHER, Seymour, Captain, Springfield, Ill., Station Hospital, Fort Sheridan, Ill.
FOLEY, Mark E., 1st Lieut., St. Nazianz, Wis., 5th Division, Fort Custer, Mich.
FRACKELTON, William H., 1st Lieut., Milwaukee, William Beaumont General Hospital, El Paso, Texas.
HAGELSHAW, Gayland L., Major, Bay City, Mich., Fitzsimons General Hospital, Denver.
HOLDEN, Alwin J., Lieut. Col., Chicago, Station Hospital, Fort Sam Houston, Texas.
HOLT, Henry T., Captain, Detroit, 5th Division, Fort Custer, Mich.
HUBBLE, William F., 1st Lieut., Decatur, Ill., 1st Medical Battalion, Fort Bliss, Texas.
JOHNSON, Henry C., Major, Madison, Wis., Station Hospital, Camp Grant, Ill.
KENNEDY, Richard L., 1st Lieut., Chicago, Puerto Rican Department.
KOCOVSKY, Elmer C., 1st Lieut., Milwaukee, Reception Center, Camp Grant, Ill.
LUM, Thomas K., Captain, Danville, Ill., Fort Benning, Ga.
MacINTYRE, Dugald S., 1st Lieut., Ann Arbor, Mich., William Beaumont General Hospital, El Paso, Texas.
MAMMOSER, Lambert F., Captain, Chicago, Station Hospital, Fort Sheridan, Ill.
MARKUS, Erwin H., 1st Lieut., Eloise, Mich., Replacement Center Dispensary, Camp Grant, Ill.
MARTINI, Henry F., 1st Lieut., Wausau, Wis., 5th Division, Fort Custer, Mich.
McCORMACK, Edward A., 1st Lieut., Niagara, Wis., 125d Field Artillery, Monmouth, Ill.
MIDDLETON, William D., Major, Hayward, Wis., Fort Sam Houston, Texas.
MOKROHAJSKY, Stephen M., 1st Lieut., Green Bay, Wis., Station Hospital, Camp Grant, Ill.
MYERS, William H., Captain, Coal Valley, Ill., Armored Forces, Fort Benning, Ga.
OXMAN, Emanuel M., 1st Lieut., Kankakee, Ill., Replacement Center Dispensary, Camp Grant, Ill.

POWELL, Harry L., 1st Lieut., Chicago, Replacement Center Dispensary, Camp Grant, Ill.
QUANDT, Eberhardt H., Captain, Rockford, Ill., Station Hospital, Camp Grant, Ill.
RAGUE, Paul O., 1st Lieut., Manchester, Mich., 5th Division, Fort Custer, Mich.
RANSOM, Gilbert T., 1st Lieut., Fairfield, Ill., 123d Field Artillery, Monmouth, Ill.
RECHLICZ, Ervin T., 1st Lieut., Milltown, Wis., Armored Forces, Replacement Center, Fort Knox, Ky.
REID, Wesley G., Major, Detroit, Armored Forces, Fort Benning, Ga.
RICHMAN, Samuel H., Lieut. Col., Rock Island, Ill., Station Hospital Fort Custer, Mich.
RUBOVITS, Frank E., Jr., 1st Lieut., Chicago, Armored Forces, Fort Benning, Ga.
RYAN, John A., 1st Lieut., Ann Arbor, Mich., Armored Forces, Fort Benning, Ga.
SEGENREICH, Harry M., 1st Lieut., Manteno, Ill., Armored Forces, Fort Benning, Ga.
SHEAGREN, John W., 1st Lieut., Rockford, Ill., Station Hospital, Camp Grant, Ill.
SMITH, Harvey S., 1st Lieut., East St. Louis, Ill., 123d Field Artillery, Monmouth, Ill.
SPIRA, Samuel B., 1st Lieut., Chicago, Armored Forces, Fort Benning, Ga.
STEINHOFF, Carl F., Major, Chicago, Letterman General Hospital, San Francisco.
STONE, Grant C., 1st Lieut., Berlin, Wis., Reception Center Dispensary, Camp Grant, Ill.
SUGAR, HYMAN S., 1st Lieut., Chicago, 5th Division, Fort Custer, Mich.
SWEENEY, Leo P. A., Captain, Chicago, Reception Center, Camp Grant, Ill.
TULSKY, Alex S., 1st Lieut., Chicago, Armored Forces, Fort Benning, Ga.
WALTER, Jacob, 1st Lieut., Chicago, Reception Center, Camp Grant, Ill.
WIER, John S., Captain, Fond Du Lac, Wis., Armored Forces, Fort Benning, Ga.
WILLIAMS, Francis R., 1st Lieut., Detroit, Station Hospital, Camp Grant, Ill.
WILLIAMSON, William P., 1st Lieut., Detroit, Armored Forces, Fort Benning, Ga.
WILTRAKIS, George A., Captain, Chicago, Station Hospital, Camp Grant, Ill.
WINKLER, Raymond J., 1st Lieut., Hilbert, Wis., Armored Forces, Fort Benning, Ga.
ZINN, August K., 1st Lieut., Battle Creek, Mich., Replacement Center Dispensary, Camp Grant, Ill.

SEVENTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Seventh Corps Area (North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, Missouri, Arkansas and Wyoming).

BREDALL, Jerome Julian, Captain, Perryville, Mo., Camp J. T. Robinson, Ark.
DWORAK, Henry Louis, 1st Lieut., Omaha, Fort Ord, Calif.
HAGEBUSCH, Omer Ernst, 1st Lieut., University City, Mo., William Beaumont General Hospital, El Paso, Texas.
HARRELL, William Bedwell, Jr., 1st Lieut., Little Rock, Ark., Camp J. T. Robinson, Ark.
HOVER, Galen Monroe, Captain, Fort Riley, Kan., Fort Riley, Kan.
JONES, Otey Sherman, Captain, St. Louis, Fort Lewis, Wash.
KLOESS, Edward John, Captain, Leadwood, Mo., Jefferson Barracks, Mo.
LIPTON, MORRIS L., Captain, Rosebud, S. D., Fort Ord, Calif.
LYONS, Virgle E., 1st Lieut., North Little Rock, Ark., Fort Ord, Calif.
PERRINGS, Fred Selby, Major, St. Louis, Fort Omaha, Neb.
PHILLIPS, Bert Lee, 1st Lieut., Bauxite, Ark., Fort Ord, Calif.
PORTER, Alfred Lamar, 1st Lieut., Van Buren, Ark., Fort Ord, Calif.
QUICK, David William, Jr., 1st Lieut., Dayport, Minn., Fort Leonard Wood, Mo.
QUIGLEY, Maurice Werling, Lieut. Col., Minneapolis, Camp J. T. Robinson, Ark.

Orders Revoked

BARRY, Gerald Williams, 1st Lieut., Kansas City, Mo., Fort Ord, Presidio of Monterey, Calif.
BROWN, William, 1st Lieut., Paola, Kan., Fort Lewis, Wash.
DWORAK, Arthur Francis, Captain, St. Paul, Fort Bliss, Texas.
FELLMAN, Abe C., 1st Lieut., Omaha, Camp Murray, Wash.
LARSON, Marvin Oliver, 1st Lieut., Hawarden, Iowa, Camp J. T. Robinson, Ark.
OLSON, William Emanuel, 1st Lieut., Des Moines, Iowa, Fort Lewis, Wash.
WETRICH, Max Franklin, 1st Lieut., West Des Moines, Iowa, Camp Grant, Ill.

EIGHTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Eighth Corps Area. The Eighth Corps Area comprises the states of Colorado, Arizona, New Mexico, Oklahoma and Texas.

BEALL, Wendell E., 1st Lieut., Pearsall, Texas, Fort Sam Houston, Texas.
DAVIS, Frank Milton, Major, San Antonio, Texas, Station Hospital, Camp Wolters, Texas.
DUBOE, Sidney Harvey, 1st Lieut., Phoenix, Ariz., Fort Sill, Okla.
ETTER, Edward F., Captain, Sherman, Texas, Fort Sam Houston, Texas.
GADDIS, Herman W., 1st Lieut., Corpus Christi, Texas, Fort Sam Houston, Texas.
HUDSON, Isaac Frederick, Captain, Stamford, Texas, Fort Sam Houston, Texas.
JONES, William Edgar, 1st Lieut., Mesquite, Texas, Fort Sam Houston, Texas.
OSBORNE, Clarence Fred, Captain, Pasadena, Texas, Fort Sam Houston, Texas.
PATTILLO, Albert Dixon, Captain, Wichita Falls, Texas, Fort Sam Houston, Texas.
PHILLIPS, Claurice M., Captain, Levelland, Texas, Fort Sam Houston, Texas.
PRESTON, Thomas K., 1st Lieut., Mimbres, N. M., Fort Sam Houston, Texas.
ROBERTSON, David Lyle, 1st Lieut., Wichita Falls, Texas, Fort Sam Houston, Texas.
ROWELL, Robert C., 1st Lieut., Rusk, Texas, Fort Sam Houston, Texas.
SALLEY, Colvin W., 1st Lieut., Baytown, Texas, Fort Sam Houston, Texas.
STANTON, William Paul, 1st Lieut., San Antonio, Texas, Fort Sam Houston, Texas.
TRIPPET, Horace H., 1st Lieut., Waco, Texas, Fort Sam Houston, Texas.

Orders Revoked

ARMSTRONG, Hiram E., 1st Lieut., Pueblo, Colo.
FRIEDLAND, Joseph D., 1st Lieut., Denver.
HAYNES, Elmer, 1st Lieut., Rusk, Texas.
HAYNES, Henry M., Jr., 1st Lieut., Gatesville, Texas.
HOWARD, Robert Bruce, 1st Lieut., Oklahoma City.
IRELAND, Paul M., Captain, Pueblo, Colo.
McGLONE, Frank, 1st Lieut., Denver.
RIKLIN, Henry Hyman, 1st Lieut., Safford, Ariz.

NAVAL RESERVE OFFICERS RECOMMENDED FOR PROMOTION

The Secretary of the Navy has approved the report of the selection board which met on January 30 to recommend officers of the Naval Medical Reserve Corps for promotion to captain and commander.

Dr. Louis Henry Clerf, Philadelphia, was recommended for promotion to the grade of captain.

The following officers were recommended for promotion to the grade of commander in the volunteer reserve of the medical corps:

GENERAL SERVICE

FREYMANN, John Joseph, Omaha.
GERDINE, Linton, Athens, Ga.
IVES, Warren C., Rockford, Ill.
JACKSON, Harry H., Detroit.
KING, W. Ivan, Dallas, Texas.
McCARTHY, Donald, Minneapolis.
RYAN, Edward Raymond, Milwaukee.

SPECIAL SERVICE

BEAN, Harold Cotton, Salem, Mass.
BURK, Samuel B., New York.
CHANDLER, Loren Roscoe, San Francisco.
COFFIN, Whitman King, Boston.
CUSHING, Edward H., Cleveland.
JOSTES, Frederick A., St. Louis.
KANE, Howard F., Washington, D. C.
KNOWLTON, Den S., Washington, D. C.
LYON, George M., Huntington, W. Va.
McCANN, William Sharp, Rochester, N. Y.
McKENDREE, Charles A., New York.
NEILL, William A., Toledo, O.
POHLE, Ernst Albert, Madison, Wis.
POWELL, Lester Davis, Des Moines, Iowa.
RIVERS, Thomas Milton, New York.
SCHMOELE, John Moore, Los Angeles.
SNELL, Albert Markley, Rochester, Minn.
STEARNS, Albert Warren, Boston.
STRANGE, William Wyatt, Huntington, W. Va.
WESTCOTT, Henry H., Roanoke, Va.

ORGANIZATION SECTION

AMERICAN MEDICAL ASSOCIATION ON TRIAL

THE TRIAL OF THE CASE OF THE UNITED STATES OF AMERICA

vs.

THE AMERICAN MEDICAL ASSOCIATION, A CORPORATION, THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, A CORPORATION, THE HARRIS COUNTY MEDICAL SOCIETY, AN ASSOCIATION, THE WASHINGTON ACADEMY OF SURGEONS, AN ASSOCIATION, ARTHUR CARLISLE CHRISTIE, COURSEN BAXTER CONKLIN, JAMES BAYARD GREGG CUSTIS, WILLIAM DICK CUTTER, MORRIS FISHBEIN, THOMAS ALLEN GROOVER (DECEASED), ROBERT ARTHUR HOOE, ROSCO GENUNG LELAND, THOMAS ERNEST MATTINGLY, LEON ALPHONSE MARTEL, FRANCIS XAVIER MCGOVERN, THOMAS EDWIN NEILL, EDWARD HIRAM REEDE, WILLIAM MERCER SPRIGG, WILLIAM JOSEPH STANTON, JOHN OGLE WARFIELD JR., OLIN WEST, PRENTISS WILSON, WILLIAM CREIGHTON WOODWARD, WALLACE MASON YATER, JOSEPH ROGERS YOUNG.

(Continued from page 630)

FEBRUARY 7, MORNING

(The Government offered a stipulation entered into between counsel for the defendants and counsel for the Government including the constitution and by-laws of the A. M. A. and the District Medical Society. The stipulation also included identifications of the organizations and defendants concerned; also memberships on staffs of hospitals and committees; also a description of Group Health Association, Inc.

Evidence on Behalf of the Government

DR. HUGH CABOT

DIRECT EXAMINATION

Mr. Lewis:—Dr. Cabot has been called, your Honor, to give factual testimony as to introductory facts and also to quality as an expert on certain matters that seem appropriate for expert testimony.

Hugh Cabot said in reply to questions that he is a surgeon, graduated from the Harvard Medical School in 1898 and served fourteen months in the Massachusetts General Hospital as an intern and was licensed to practice in 1899. Before he went into the Harvard Medical School, he attended the Roxbury High School and Harvard University, as an undergraduate. He was given an honorary degree of LL.D. at Queen's University, Belfast, Ireland, in 1925. He went immediately into practice as assistant of his cousin, the late Arthur T. Cabot, and then was appointed instructor in surgery at the Harvard Medical School. Then in 1904 he was appointed surgeon to outpatients at the Massachusetts hospital and went through the grades until he left Boston in 1919; surgeon to outpatients, assistant surgeon, and finally full surgeon. In the Harvard Medical School he was an instructor from 1902 until 1910; then he was appointed an assistant professor and then in 1918 clinical professor. He also practiced privately. He was surgeon to the Baptist Hospital from 1901 to 1919. In the World War he went overseas and joined the British medical service in 1916 and served throughout the war. He was mentioned four times in the dispatches and received the Order of St. Michael and St. George. Then he returned to Boston for a few months, and then in September 1919 went to the University of Michigan as professor of surgery, a full time appointment. Later, in 1921 he became dean of the medical school at the University of Michigan. As dean he was occupied, not only with technical matters of surgery but with school administration and the problems of students' educational requirements. "It took a great deal of time that I should have been glad to use for other purposes." In 1930 he went to the Mayo Clinic as one of the consulting surgeons.

Q.—The Mayo Clinic is the one that is the clinic out in Minnesota operated by the Mayo Brothers, the famous Mayo Brothers?

A.—Yes, sir.

Q.—And what was your capacity with that famous clinic?

A.—I was a consulting surgeon, which meant that I was called in consultation by the physicians in most of the general field of surgery. Most of my operative work was in the field of genitourinary surgery, now concealed under the name of urology.

Q.—But you are, Doctor, a general surgeon, and while you were at the Mayo Clinic you were a consultant in general surgery, but when you actually used the knife your specialty was genitourinary surgery?

A.—Yes.

THE MAYO CLINIC

. . . . . .

Q.—Now, I wonder if fairly and properly you could describe the Mayo Clinic to this jury.

A.—The Mayo Clinic was, I suppose, the first private organization which brought together in a very small town, Rochester, a group of physicians, surgeons and specialists, beginning in a small way with Dr. Will and Dr. Charlie. They were the men who built it, or their father—they worked with their father for some years; and I believe the conception of a group, formal group, probably began about 1887. . . . You think of a hospital nowadays as an institution around which physicians in all the various fields are grouped. Here was something which started as a group of physicians, never did own or operate hospitals; which were operated by a separate organization. The Mayo Clinic never thought it was wise to involve itself in the operation, the business operation, of a hospital; though of course the hospital group and the Mayo Clinic were very closely associated. They continued to bring in from all parts of the country physicians from various fields. A good many of the men who were on the staff and remained on the staff were men who came there as youngsters, young physicians, in the capacity of what now would be thought of as interns; then remained on as assistants, and finally were taken on to the permanent staff. Later, when the organization became larger, they brought men from other parts of the country and to some extent from other countries. Then I think a very important development was the establishment there of a fellowship group, in which, under funds which had been saved from the operation of the clinic, they took on an increasing number of young physicians in all of the fields, who must have had not only their medical education but some hospital experience before they came to the clinic, and then remained for a period of three or more years on a meager salary but in theory at least enough to keep them alive; and they were candidates for an advanced degree, generally a master's degree in some field of medicine or surgery or the specialties. Some of them remained there for five, six or more years, and from that group in the later years many of the members of the staff were selected. . . . The Mayos, being of British origin, were rather kindly to the British, and there were English and Irish and Scotch and many Canadians. . . .

Q.—What would you say as to the professional standing, capacities and reputations of the physicians who are employed in this group?

A.—I think they have enjoyed a good reputation. It would be a mistake to assume that all of the world's ability was centered in that institution, or anything like it, but on the whole they always had a very able, capable group of people.

Q.—How were they compensated, Doctor?

A.—Salary.

Q.—Were you compensated on a salary?

A.—Always.

Q.—And the same thing is true of your other distinguished colleagues there?

A.—Except a group which was always a little vague to us. There was a group of partners and it was a little doubtful just who some of the partners were. Some of us were rather curious. We never did quite know. Of course, the Mayos and some of their relatives, sons, sons-in-law, and so forth. But there were other members and I never did quite know how many partners there were, but it was a small number, and, for practical purposes, all of the physicians in that clinic were on salary.

Q.—How were you compensated when you were dean of the Michigan Medical School?

A.—Salary, flat salary, from the beginning, full time.

Q.—And when you were a professor of medicine at Harvard, Harvard Medical School?

A.—There we were paid chiefly in reputation, I guess. If I remember, I drew the princely salary of $200. I may have been raised to $500 at the end. But as far as money was concerned, it would just about keep you in cigarets.

Q.—Do we understand, Doctor, from your testimony that you and your colleagues at the Mayo Clinic were engaged in what is known as group practice?

Mr. Leahy:—Your Honor, I object to that question. There is no definition of what group practice is.

Mr. Lewin:—If the Court please, Mr. Leahy discoursed at length to the jury on group practice yesterday.

Mr. Leahy:—If your Honor please—

THE COURT:—I am about to sustain your objection.

Mr. Leahy:—Thank you.

THE COURT:—He named this group. It isn't necessary to classify it.

Mr. Lewin:—Can we have the doctor give it this hideous name, though?

THE COURT:—Well, I don't want to select his language for him.

By Mr. Lewin:

Q.—Doctor, how would you name this practice you were engaged in at the Mayo Clinic?

Mr. Leahy:—I object to that, if your Honor please.

Mr. Lewin:—He would rather have the jury get it from him, if your Honor please.

Mr. Leahy:—Let him tell just what the Mayo Clinic was, how they operate.

THE COURT:—Just let him describe it. He has described the group in a general way.

Pardon me for saying the word.

(There was laughter in the courtroom.)

THE COURT:—Now, I will say to you folks, we want to conduct this trial in good humor and I don't expect it to be carried on like a funeral, or anything of the sort, but, nevertheless, I have my own ideas, which are such that I feel compelled to suppress anything in the way of laughter or outbursts. After all, there must be a certain fair degree of dignity in the conduct of the court and I must insist on it on the part of everybody present.

By Mr. Lewin:

Q.—Dr. Cabot, tell the jury, if you will, what advantages, if any, there were to the fact that you had there a gathering of doctors on a salary.

A.—I think if I may use the word "group"—and I think it is important to remember that the grouping together of physicians for the purpose of effective practice goes back a great many years. It may be said to have begun I guess with the early beginnings of the great hospitals. We saw them in Europe before we saw them here. There were gathered together, for the purpose of treating the indigent, physicians in all of the fields as they existed. In earlier days there was no great distinction between the general men and the special men, but they were gathered together in those hospitals for the purpose of effective treatment. I think we want to remember in the whole development of group practice it began there many years ago, in the great hospitals. Now, as far as my knowledge goes, the Mayo Clinic was the first group which you might call a private practice group. These great hospitals of course were not—the physicians and surgeons and specialists there were not in private practice while they were at the hospital; at least in the earlier days. In later days there were private physicians associated with these hospitals, but in the beginning they would work on charity patients and receive no compensation, no financial compensation; though great advantage of course in association with those institutions. Now, the Mayo Clinic, I think, is the first successful, eminently successful, attempt to bring together in a private institution a group which would cover all of the fields of medicine, surgery and the specialties and have there incorporated the necessary laboratories which are essential to the conduct of the great hospital organization.

Q.—Could they have consultations between themselves, the members of the salaried group?

A.—The advantage at the Mayo Clinic, or any of the clinics, is the same as at the great hospitals, that you have a very close relation with all your colleagues. In normal private practice it may be quite difficult to get hold of your colleagues, but in the hospital, and more so in the clinic, you can put your hand very readily on your colleagues in any field, and in the clinic, which was always chiefly under one roof, it was easy to obtain access not only to all the physicians and surgeons and specialists but men in the laboratory field, the bacteriologists, the chemists, with very great saving in effort and I think with enormous educational value. There in the hospitals, and even more so in the clinic, we all of us kept more or less abreast of the times in fields which were not our own particular fields, by constant contact with our fellows with whom we could talk lightheartedly but very helpfully in keeping abreast of the times.

Q.—Mr. Leahy told this jury yesterday—

Mr. Leahy:—I object.

Mr. Lewin:—It is the basis for a question.

Mr. Leahy:—You are not going to make me the basis for anything.

THE COURT:—It is not the proper way to state the question. I sustain the objection without any discussion.

By Mr. Lewin:

Q.—Dr. Cabot, what have you to say about this, the statement that this expedient of practicing in a group was a new idea of social philosophy which sprang up in 1933?

A.—Oh, that is the time—the interpretation. The grouping for the purpose of more effective practice goes back for a great many years in the hospitals, and the Mayo Clinic, then the developments which took place as a result of the successful operation of that organization. A grouping could not be said to have begun at all recently. It is a more or less steady development tending to fit in with the development, economic, financial and, particularly, the development of medicine in its increasing complications.

Q.—Now, Doctor, I would like to continue a little bit more with your qualifications. Have you been interested not only in group practice but have you studied it?

A.—Yes, sir.

Q.—What kind of studies have you made of it, Doctor?

A.—Well, I have taken the trouble to actually visit and go over the ground with various samples of group practice, and then I have spent a great deal of time in studying their publications, the method of organization, not only in this country but other countries; though nothing precisely corresponding with group practice, I think we understand, is at all common in this country outside of the hospital.

Q.—Have you written any books?

A.—In that field?

Q.—In that field or any field of medical economics, if I may use that term, or the distribution of medical care.

A.—Yes, I have written two books, one published in 1936 under the title of "The Doctor's Bill" and another published in 1940 under the title of "The Patient's Dilemma."

Q.—And have you also written on scientific subjects in your own field of surgery?

A.—Oh, yes. Probably too much. The field of surgery and genitourinary surgery for many years.

Q.—Were you ever editor of any scientific paper?

A.—No, not a paper. I edited a two volume work on urology, known as "Modern Urology," the first edition in 1918, one in 1924 and one in 1936, I think, or 1935.

Q.—Have you had occasion to contribute to medical journals?

A.—Oh, yes. Many papers, sir.

Q.—Could you give the jury some idea of the number of titles you covered?

A.—The last time my titles were totaled up so they could be numbered, there were one hundred and fifty. That was probably some two or three years ago.

THE BOSTON ORGANIZATION

Q.—Doctor, have you had any experience in prepayment clinics where the patients who belong to the clinics are entitled to the medical services and pay regular dues in advance, and then are entitled to receive treatment from a group of doctors?

A.—Yes. At the present time I am working with a group of physicians who are arranging for the medical service of a corporation known as Health Service, Incorporated, in Boston, on a prepayment basis. And they arranged with a partnership of five physicians to plan for and arrange for the medical care to their subscribers, and I am the so-called medical director of that partnership.

Q.—Let me be sure I get the picture. How long have you been connected with them as medical director?

A.—Well, in theory a year. We didn't actually begin to treat patients until last May.

Q.—Would you describe that undertaking a little more fully?

A.—The group was started by a group of people in Boston, none of whom were physicians but who were impressed by the fact that there was a considerable number of people in the community who, if they could obtain their medical care on a fixed prepayment basis, should be able, if the plans were worked out satisfactorily, to obtain their care within their rather modest incomes. These people were all lay people and represented the general public. After a good deal of study, of which I know nothing, they came to me among—along with four other physicians, and asked us if we would undertake to plan for the medical care. We agreed and a partnership was formed of five physicians. Do you care to have the names?

Q.—No, I don't think that is necessary.

A. (continuing).—who represented medicine, obstetrics, surgery and diseases of children. They undertook to arrange for a planned medical care and to associate with themselves other physicians. I think perhaps the most striking thing about that organization was that from the start we tried very hard to get this thing to work with the least possible disturbance of the normal arrangements of private practice. What I refer to is the associated physicians, of which there is a considerable group, to carry on their private practice and to see the subscribers to Health Service, Incorporated, as they see their other patients. It was our notion that if a sufficiently large group of physicians was included, in this way they would be able to do this work without disturbing their normal relations and thus fit into the present though probably changing pattern of medical practice.

Q.—How did the partnership which composed the professional group receive its compensation?

A.—As partners there we received no compensation; let us say, for our administrative work. In so far as these partners act as consultants, they receive their compensation just as do the other physicians. They are on exactly the same basis.

Q.—Is there a contract in existence between the medical group on the one hand and the business side on the other?

A.—Oh, yes. It is an imposing document; which doesn't mean anything to me at all.

Q.—Would you say by reason of that you were engaged in contract practice?

A.—I would suppose so, the perfectly definite contract between the corporation and the partnership.

Q.—Now, can you describe the group of patients which you serve and the extent of care which you attempt to give them?

A.—We undertake—

Mr. Leahy:—Pardon me. I want to say for the record we will admit the doctor gives the very best of care in the world to his patients. In the economy of time, I don't know why it is we are going so far afield.

Mr. Lewin:—The reason we are going into this is partly because of Mr. Leahy's opening statement. This gentleman is to be qualified on group practice and on prepayment plans and he is going to state the advantages of it.

THE COURT:—Mr. Leahy was stating his defense. You are now proving your case in chief. It isn't the usual time. I will give you a chance in rebuttal.

Mr. Lewin:—Your Honor, the indictment lays the foundation for just this testimony.

THE COURT:—That may lay the proper ground. Mr. Leahy's statement was his defense.

Mr. Leahy:—Your Honor, the indictment gives nothing about Dr. Cabot's service.

Mr. Lewin:—Oh, yes. All of that has been fully argued.

Mr. Leahy:—Well, I don't care.

THE COURT:—I don't want to unduly limit the examination of any witness. But we have a long trial before us at the best and we don't want to go any further afield than is necessary. It seems to me the doctor's knowledge of this one particular institution is hardly relevant.

Mr. Lewin:—He is going further, your Honor.

THE COURT:—Well, put another question.

Mr. Lewin:—Your Honor's ruling is that he cannot describe the group in this particular thing he has had experience in for years?

THE COURT:—I will permit it if you will do it differently. May I suggest, without any criticism of the doctor, that he answer that question and then not go off into other matters. If you will put your questions so as to keep things going, we will probably save a little time.

By Mr. Lewin:

Q.—Dr. Cabot, will you tell this jury briefly the character of the group that is served, the patients, and the extent of care that you attempt to give them?

A.—The group is limited only by the statement in the agreement between the corporation and the subscriber that the family income shall not exceed $2,500. There is no other limitation. The great thing is complete medical care, including special care when that is necessary, but not including hospital care which he could obtain in any other way.

Q.—Do you give them a physical examination before admitting them to treatment?

A.—There is admission by groups and as individual subscribers. The individual subscribers are required to have a physical examination. The groups are not.

Q.—Can you tell the jury the purpose of requiring the physical examination?

A.—To be sure that we get a reasonable cross-section of the community and do not become overloaded with people who are already ill, old or what the insurance people call bad risks.

Q.—Doctor, tell the jury something about your membership in medical societies, will you?

(Dr. Cabot listed his memberships.)

. . . . . .

Q.—Are you still a member of the American Medical Association?

A.—Oh, yes.

Q.—Have you ever participated in the affairs of the American Medical Association?

A.—Yes. I was a delegate from Massachusetts to the House of Delegates. I am a little vague about it; I think it was about 1910 or 1911, though it may have been 1911 or 1912. Then I was the chairman of the Section on Neurology in 1916, but unfortunately I was overseas in that epochal disturbance and did not serve.

Q.—Dr. Cabot, with that background of experience I am going to ask you if you will describe to this jury the extent and care of medical and surgical practice around the time when you began. Later I am going to ask you to contrast that with the character of medical practice and surgery practice as of today. First, will you describe generally the character of medical practice some decades ago?

(Dr. Cabot described exhaustively the difference between medical practice 1890-1900 and that of today.)

Q.—Will you describe the typical physician's equipment of those days?

A.—It was very much simpler than it is today. The origin of the black bag was so commonly associated with the practicing physician—he had to have a relatively small number of drugs; he had his thermometer; he had his stethoscope. If he were doing obstetrical practice he might keep in his bag his obstetrical equipment, or he might take it only when he was actually going to use it. It was common for physicians of that day to carry a little surgical case which contained some forceps and a knife or two, some ligatures and scissors with which he could do small emergency operations. But a relatively simple equipment would enable him to deal with most of the situations that he was faced with.

Q.—Was the use of x-rays for diagnosis common then?

A.—Oh, no, sir. It began in my day in the medical school, and it was still in the experimental stage until—well, after the turn of the century.

Q.—How extensive was the knowledge of diseases and how extensive was the treatment that was accorded to disease after it was found, in those days?

(Dr. Cabot then contrasted diagnosis and surgery in the two periods. In reply to questions he defined the basic sciences.)

Q.—Can you compare these advances in these various sciences in the last four decades, let us say, with advances in such sciences and in the care of health preceding that period?

A.—Well, it is possibly true that the advances in the last forty years have, in their net value, been almost equal to the bulk of previous knowledge.

Q.—Where does that leave the modern doctor, Dr. Cabot? Are you able to carry on a busy practice and to have accurate knowledge of all these modern sciences in their application to the treatment of diseases?

Mr. Leahy:—Pardon me, Doctor. I will have to object to the form of the question, if your Honor please, because we really do not know what he seeks to elicit. He says "Are you able?"

Mr. Lewin:—I would like to know whether he is able, and then I will go a little further and ask him if anybody else is able.

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THE COURT:—If it is to be followed up, I see no harm in it, Mr. Leahy.

Mr. Leahy:—Are you reframing the question as to whether the doctor is able—

Mr. Lewin:—If he is not able, I don't know anybody who is.

Mr. Leahy:—I am happy to hear you talk, and I will listen.

Mr. Lewin:—You are going to hear a lot.

THE COURT:—Let us get along.

The Witness:—The mass of knowledge which should be available for the treatment of disease is today entirely beyond the grasp of any one person. It was possibly within the grasp of the physician half a century ago, but increasingly it has become impossible for any one physician, particularly if he is engaged in reasonably active practice, to have even a bowing acquaintance with many of the special developments which are of real importance and essential importance to the patient.

SPECIALIZATION

By Mr. Lewin:

Q.—Would you describe to the jury the extent that specialization has entered the field of medical and surgical practice now?

A.—It is very great and it is steadily increasing. Today we have among the specialized people the general consulting physician and the general consulting surgeon. Forty or fifty years ago they could fairly well cover their respective fields, but now the specialists in the subdivisions have made that impossible. There is probably no general consulting physician today who does not require the services of experts in their fields. Experts in diseases of the eye, ear, nose and throat are common enough. Experts in diseases of the heart and lungs, experts in diseases of the gastrointestinal tract and experts in diseases of bones and joints. Then, on the surgical side the technic of surgical operations has become so developed that it is almost impossible for any one surgeon to cover the whole field, even leaving out the special senses. So that the general surgeon or the general physician today requires constantly advice from his more specialized brethren.

Q.—Does he require consultations?

A.—Yes.

Q.—Now, has there been any change during that period in the way in which specialists are made?

A.—Yes. Forty or fifty years ago, as the specialties began to develop, there were always people who had been engaged in general practice and then found there a liking to develop a narrower field. That was chiefly made possible by their work in the great voluntary hospitals. But until relatively recently, twenty years ago, most of the specialists had been general practitioners in one branch or another. But more recently the length of time involved in medical education has become such that if men left medical school and the hospital and then went into general practice, and then, having had a view of the field, went back to train themselves and be trained as specialists, they would be almost middle aged before they got back. So it is not very feasible.

Q.—So that you would say it is now common practice for a man leaving his university to enter at once into a specialty without going through the general practice?

A.—Yes; it is very common practice. They commonly take one or perhaps more years in a hospital, in the general field. Then if they propose to practice general medicine they will carry on another year. Otherwise they will begin at that point commonly enough to train themselves in a special field, which frequently runs from three to five or more years.

Q.—What, in your opinion, is the chief cause for this great increase in specialization?

A.—The increase in the essential knowledge. You could not possibly go on without specialization. Of course that is in no way peculiar to medicine.

Q.—Doctor, I wonder if you could tell us of the advances, if any, there have been in the education of doctors and in educational requirements that one must fulfil in order to be a doctor?

A.—At the time I graduated, in 1898, at the Harvard Medical School, which was one of the older and well thought of medical schools, there was only 10 per cent of the students that had any college education at all. The great bulk of the students came to the medical schools of the country, in the middle nineties, from high schools. About the time of my graduation, or within a few years, various universities began to require more or less college work, and the thing went on, not steadily but progressively, up to the present time, where all of the recognized medical schools of the country require at least two years of college work before they will consider a candidate for the medical school. A large number of medical schools take four years of college work. There is another group, mostly, I think, in the state universities, which have a combined degree. They can take three years in a literary college and four years in the medical school and get a baccalaureate degree and a doctor's degree. So at present it has come about that, while a student may be a candidate for a medical school with only two years' college training, the majority, I think well over 60 per cent, or perhaps more than that, have either four years of college work or this combined degree, so that they take either seven or eight years before they obtain their degree in medicine. Then you will have to add to that the requirement of many states, which is accepted by practically all students, that they shall have some hospital experience. Many states require that before admitting students to examination for license. That practice is increasing, so that at the present time many students may spend nine or ten years in preparation for their life work.

Q.—What is a graduate doctor usually called when he is gaining his initial hospital experience?

A.—They are called interns during the earlier time. Then, as they carry on, after they have been with the organization a year or two, they are often spoken of as residents. In any case they reside more or less at the hospital.

Q.—What can you tell the jury in regard to the extent of equipment that a modern doctor must have, contrasted with what he had back in the days of the little black bag?

A.—Well, he must have, or have access to, all of the methods of modern diagnosis. In the earlier days perhaps he did his own laboratory work as far as it was necessary, made simple examinations of the urine and of the sputum. Today there are very few physicians who do that. They must have access to a laboratory either at the hospitals with which they are associated or a private or commercial laboratory where these examinations are done for them. But if they are in normal private practice and treating patients in their offices they require more equipment than was required in that earlier day, particularly because of methods of accurate diagnosis requiring electrical gadgets, and so forth, which are very assential to accuracy. But, unfortunately, they are very expensive.

Q.—I was going to ask you if an x-ray machine is an expensive piece of equipment.

A.—Oh, very. But very few private practitioners would be required to have an x-ray machine. They would use that of an expert in the vicinity.

Q.—Do I understand, then, that they would send the patient to another doctor who has an x-ray machine?

A.—Yes.

Q.—Could a number of doctors use the same equipment feasibly?

A.—Oh, yes. That is one of the important points in the grouping together, which goes back to the days of hospitals when one set of physicians used the rooms in the morning and another set in the afternoon. In any group you can consolidate office space and save enormously on equipment, and you can make the office space and the equipment work eight or ten or twelve hours a day instead of having a three or four hour day. Great economy there is possible.

Q.—Could they, by the same token, economize in having a common laboratory and common technicians to operate the laboratory?

A.—If the extent of their work is sufficient there are great possibilities to be obtained there in the saving not only of time but of expense. A well organized clinic, such as the Mayo Clinic, though there are many others, is likely to have its own laboratory, and they can get their laboratory work done not only more promptly but equally as efficiently and much more cheaply by keeping the thing working a twelve-hour day.

Q.—What kind of equipment, generally speaking, would a clinic need in order to render complete medical care except for the hospitalization?

A.—Assuming that they did not use the hospital laboratory, they would have to have the laboratories of pathology and bacteriology and medical chemistry available at their hands. If their association with the hospital was quite close they might use the same organization.

HOSPITAL ORGANIZATION

Q.—I wonder if you could describe briefly to the jury the way in which the modern large hospital is run and how it is governed and of what it is composed?

A.—Normally the hospital is run by a board of trustees who are laymen. If it is a tax-supported hospital, a municipal hospital of any kind, it may have an elective board or it may

be an appointive board. But the governing board is, as a rule, a lay board, sometimes with one or more physicians to advise the board on details. They then must have an administrator. He used to be known as a hospital superintendent. I think they now like to be called a hospital administrator—whose business it is to carry on the complicated machinery, because in some aspects a hospital is a hotel on one side and a highly technical medical job on the other. The appointments to the staff are ordinarily made by the governing board.

Q.—Appointments to the medical staff?

A.—To the medical staff; yes. But of course the administrator will have to have his assistants under him. The medical staff is ordinarily appointed by the governing board with a varying amount of advice from the administrator.

Q.—Who directs the purely medical affairs of the modern hospital?

A.—The staff.

Q.—The staff of doctors?

A.—Yes. They are divided up as a medical staff and a surgical staff. In large organizations both of those staffs will be subdivided under the specialties, and those staffs will have their own group meetings.

Q.—You are speaking of what is known as the regular or attending medical staff?

A.—Yes.

Q.—Does the hospital today usually have another medical staff?

A.—Yes; a relatively modern development and one of essential importance is that they have a regular staff whose responsibility for the care of the patients who are indigent or partly indigent and who are a direct charge against the trustees of the hospital for whose care they must provide. Then they commonly have what is often termed a courtesy staff. That is to say, physicians who have no duties in the care of charity patients, but who bring their own patients to the hospital and for whom the hospital must assume some responsibility in regard to their capacity and abilities.

Q.—Both of those staffs, I take it, are elected by the lay board of trustees usually?

A.—Yes; though I suppose in practice the members of the courtesy staff are picked out by the regular staff and recommended to the trustees, and the trustees, I take it, would hardly concern themselves with matters of which they could have little knowledge.

Q.—Generally speaking, is it difficult for a graduate doctor who has been in practice and who has had internships and that sort of thing to get courtesy staff privileges at hospitals?

Mr. Leahy:—I object to that question, if your Honor please. I do not think that is a proper subject for expert testimony.

THE COURT:—Will you repeat that?

Mr. Lewin:—I asked Dr. Cabot as an expert whether, in his opinion, it was a difficult thing for the ordinary graduate physician who had internships and that sort of thing to get a courtesy staff privilege at the hospitals.

THE COURT:—He may answer.

Mr. Leahy:—Exception, if your Honor please.

A.—No; hardly a matter of difficulty; but yet the extraordinary situation prevails the country over by which a physician licensed to practice by the state or territory, as the case may be, is still excluded from hospitals. That is, I think, a most unfortunate condition, because today I think it may be stated dogmatically that it is impossible for a physician to give the best medical care if he cannot take his patients to a hospital. He can, of course, send them to a hospital with a break between him and the patient; the patient goes to the care of somebody else. It is a very anomalous situation by which a physician, many physicians, licensed by the state, authorized by the law to practice medicine and surgery, can still be excluded from the use of a hospital without which their practice is not as good as it could be. It is very serious, I think.

By Mr. Lewin:

Q.—In your opinion, what should be the standards that should govern the admission of a doctor to a hospital, who is licensed and has had training?

A.—I see no avoiding the conclusion, Mr. Lewin, that every physician licensed by the state must be assumed to have the capacity requisite in a physician, and that he ought therefore to be potentially a proper person to have on the staff of any hospital. It must always be true that there are second-rate and incompetent people in the medical profession, just as there are in any other field. But I think they should be selected by the hospital staff by a method of trial and not excluded for any reason whatever. To undertake to say that a given physician is not a competent person to be admitted to a hospital for the care of patients seems to me to run counter to the fact that the state has given him a license to practice medicine. Then another organization, not a state organization, undertakes to say that he may not do so in the most efficient way. I think the selection and the exclusion of the incompetents should be made by admission to the hospital staff, then bringing them along, if they are younger men, as all younger men are brought along, under the supervision and advice of their elders, and, with the possibility that they are incompetent or dishonest, of excluding them. I do not like the notion that there can be physicians licensed by the state who are forbidden to practice medicine in the proper way.

Q.—After you have given this licensed physician a trial, I understand you to say that you would exclude him if he turned out to be incompetent?

A.—Yes.

Q.—Or dishonest?

A.—Yes.

Q.—Are there any other standards that ought to operate to exclude him?

A.—Oh, I think so. I think that many physicians applying for a hospital will be people of limited ability; that they should be admitted to the staff only to do the more simple things. Take the surgical staff, for instance. They should at the beginning be allowed to do only the more simple and safe operations. As they go on demonstrating their capacity under the supervision of the senior staff they should be allowed to do more and more. For some of them there would obviously be a limit beyond which they ought not to be allowed to go; they are not of the caliber that can take on the difficulties and responsibilities and the tragedies of major operative specialties, for instance. They are not built that way. But they ought to be allowed in the hospital to do those things for which they have demonstrated a capacity.

Q.—Those standards you have described go to the professional ability of the men?

A.—Yes.

Q.—What ethical requirements or standards should there be, in your opinion?

A.—I suppose, the ethical requirements of the general population. You don't want a crook around the hospital any more than you would want him anywhere else. A person who cannot live up to the ethical standards of society is no person to have around a hospital.

Q.—Are you defining ethics in answer to that question, Doctor?

A.—As rules for the conduct of life, sir.

Q.—Does it have a moral significance?

A.—Oh, very clearly.

Q.—Does it embrace economic views or practices?

A.—Oh, I don't see how it could. I may believe in free silver, but I don't think that that makes me necessarily a good surgeon.

Q.—Or necessarily not a good surgeon?

A.—No.

Q.—Has there been any increase in the use of hospitals in this period of four decades that we have been discussing?

A.—Oh, very great. I can use my own experience. When I was first practicing with my cousin we practically did no operations on private patients in hospitals. They were all done at patients' homes. His charity patients he saw every day at the hospital, but not his private patients. The operations were time consuming because we had to prepare for them. We invaded the house with assistants and the nurse and largely disrupted its economy and did a good deal of damage to it on the theory that we were improving it, and the whole performance took a great amount of time. What was happening, in fact, was that you were turning the house into a hospital temporarily. As people became less fearful of hospitals and got rid of the notion that hospitals were places where a good deal went in and a good deal less came out, they found it was better economics to hire a piece of the hospital for the purpose rather than to turn their homes into a hospital. And today severe illnesses and surgical operations, except the more trivial ones, and a great deal of the obstetrical work is done in hospitals, because it is better done there. The physician and the surgeon have the equipment at hand and there is a saving of expense as well as a saving of time. Of course, not long before the days that I am telling you about, hospitals were the most dangerous places in the world for surgical and obstetrical operations. Even in our early days our incidence of infection was considerably less in private homes than it was in public hospitals.

Q.—Now, Dr. Cabot, you have told us of the longer period of education that is required in these days in comparison with the former days when you came to the profession, the expensive diagnostic and therapeutic equipment that is now necessary, the longer and more accurate diagnosis and treatment accorded in these days, the increase of specialization which you say has resulted and the increased use of hospitals. What have you to say about whether or not the cost of adequate medical care has increased during this period that we have been discussing?

A.—Of course it has. It has increased enormously and inevitably. What the patient is getting today is something that is enormously better but, inevitably, much more expensive than he got or could have gotten forty or fifty years ago. The cost has risen with the improvement.

SERVICE TO VARIOUS GROUPS

By Mr. Levin:

Q.—And would you just state briefly the basis for that opinion?

A.—Well, I suppose my own experience; what I know from observation as to the costs of care at an earlier day and what I know as to it now. At an earlier day where there was illness sufficiently serious to require hospital care, the hospital charges were not high; as a rule considerably lower than today. There was less special nursing which today has become very expensive; there was less expensive medication. Just as an example, in some diseases, pneumonia for instance, in its treatment today, oxygen may be required which might become very expensive; come to several hundreds of dollars for a case of pneumonia. And then there are the laboratory investigations and studies, of which x-ray is typical. You must have x-rays and inevitably they are one of the most expensive features. So that the hospital cost of hospital care is very much greater. Now, the cost of care to patients who are not required to go to the hospital has risen only in the nation to the fact that the physician himself is under greater expense. What you may call his overhead expenses are very much greater and, obviously, he must collect from his patients enough to pay him a reasonable income.

Q.—Then if you have to use more than one physician, the person who uses those physicians has to pay multiple fees?

A.—Yes, and for consultations; consultations today are and should be very much more numerous than they were, and each one of these people must be compensated. The consultant having special knowledge and seeing a great deal fewer patients must have more for the consultation than the physician who sees the patient in his office; and therefore the charge for consultants, if they are used to the full extent that it is to the interest of the patient to use them, enters very largely in the bill.

Q.—I think you testified that group practice plan, the one with which you are associated, limited its membership to persons with family incomes of less than $3,500 a year; is that right?

A.—Yes.

Q.—Have you in your studies and writings on these subjects had occasion to explore the question of the effect of these increased costs on groups enjoying that amount of income?

A.—Will you repeat that, please?

(The pending question, as recorded, was read by the reporter.)

By Mr. Levin:

Q.—That is, less than $3,500 a year for families?

A.—Yes.

Q.—What effect have these increased costs had on the amount of care those people received?

A.—Of course, that category is composed largely of people of considerably less income than that. I myself believe that it is very difficult for the patient with a family to obtain and pay for adequate medical care today on those salaries on the fee-for-service basis.

Q.—What is the fee-for-service basis?

A.—It is that whereby each physician who gives advice in a given case charges his own fee and sets it at what seems wise and proper to him. It is a service wherein each piece of work is paid for.

Q.—What must the person with that income then do in order to get so-called medical care?

Mr. Leahy:—In his judgment.

Mr. Levin:—Yes, in your judgment, Doctor.

The Witness:—He has three choices in meeting these expenses which he cannot pay. And I was interested to learn recently that in New England over 85 per cent of all moneys loaned by the small loan people was for unpaid doctors' bills. It showed that these were a very large item. Now, he may do what a great many people certainly do, ask for and obtain less medical care than he feels would be desirable and is in fact desirable, or, he may more or less throw himself on the mercy of his community and accept charity. Now, unless there is provided some other method he is in a bad fix, I think, anyway.

Q.—What other method occurs to you whereby adequate medical care could be provided for that man?

A.—Oh, the method with which I have been so much concerned for many years. That is, a prepayment basis, whereby a considerable group of people band together, make a regular payment on a monthly or other basis they think fit, and then engage the services of a group of physicians for whom this group of consumers, as we call them, can supply a definite income. The subscriber knows how much money it will cost him, he knows how much money he will have and how much money he can pay. Now, if the group is of sufficient size the thing will work in such a way that entirely adequate and very good treatment can be delivered that could not be delivered by a smaller group, but what happens in practice is that the fortunate man who happens to have a little illness in his family pays for the unfortunate man who happens to be badly stricken with unpredictable illness. It smooths out. This practice has the outlines of an insurance feature, though it is not technically insurance as such.

Q.—Why do you say illness is unpredictable?

A.—Because I think you are in the hands of an all-wise and unscrupulous Providence. I don't know how to predict it.

Q.—What is meant by the term "unforeseen incidents of illness"?

A.—This very thing: nobody can tell when your boy of 17 will go out and hit a telephone pole. It is quite unpredictable when that will happen but not uncommon.

Q.—And now, what experience have you had, and what studies have you made, of these prepayment plans, whether they go along with group practice or not, such as you have just described.

A.—Well, in regard to some of them I have actual knowledge by having studied organization and seeing it work, so far as one can understand such things. As regards the others, by study of publications showing how many subscriptions or subscribers they have, what is the nature of their staff and what is the evidence that care on a statistical basis is complete or incomplete, along that line, et cetera. So that as to some I have personal knowledge or its equivalent; as to others it would be dependent on the accuracy of the publication.

THE ROSS-LOOS CLINIC

Q.—Doctor, will you tell the jury which of these plans you have had actual experience with?

A.—I have been very much interested in the Ross-Loos Clinic, largely because it was one of the earlier experiments if not the first experiment of its kind in this country. It was an experiment in the beginning; it is no longer, it is and was on a prepayment basis; and then I watched and have seen over a considerable number of years how—

Q. (interposing)—Now, Doctor, I would like to have you spell the name of that clinic.

A.—R-o-s-s (a Scotchman) and L-o-o-s (a native of California); he may have been descendant from the Indians, so far as I know.

Q.—They are the doctors who founded the Ross-Loos Clinic?

A.—Yes, and they added certain partners to the group as time went on; but still the great majority of the staff is on salary.

Q.—Could you tell the jury a little more about the development of the plan and whether it has had any success or not?

A.—Yes, it was started on the assumption that the world consisted of certain groups of people, and that in the city of Los Angeles there would be those who would be glad to get their medical care by paying so much a year for a guaranteed complete care. It began in a small way. I can't quite recall what group they took in but they insisted from the start that they would deal with groups only, and one of the earlier groups was of teachers; then there was another similar group, and a group of postal employees; and then they went into the various commercial fields. But they insisted from the start they wouldn't take individual subscribers but only people who represented a percentage of an employed group. The subscriber must be employed. He may then bring in his dependents on a very much reduced rate but not the same rate which he paid, but it is for a family of known size—they sometimes remain known for a time—that it is figured about what the net cost will be. Their plan, I think, from the start included hospital care. They had a hospital which they did not own but which

they supplied with patients in such an increasing number that they had a majority of the patients in the hospital; they may have the whole of it.

Q.—By giving the hospital those patients they defrayed the expenses of the hospital, but the hospital remained a local private institution?

A.—Yes. For a good many years they used only one hospital, and I think they had some working agreement with that hospital that all patients would go to that hospital. Now, the thing has spread over a very large area; the city of Los Angeles reaches over a wide area, for miles and miles. They have substations too, now, where they have a physician and a nurse, and a regional office, and patients may go there with conditions that do not require complicated treatment. In other words, it is almost the situation of the general physician, only he is part of the organization and on a fixed salary income. Very early, I think almost at the start, they built themselves a clinical building so that they would have, as has the Mayo Clinic, all their organization collected in one place, so that now although it is spread out into the surrounding country all the important difficult work is done in the clinic building.

Q.—Has this prepayment feature sprung up as a development in social philosophy only since 1933?

A.—Oh, no; the theory of prepayment, of course, goes back into the days of the British Friendly Societies; has been going on for more than a century. It was evolved in cases of large practice, and the principles and theory is present in the various forms of contracts for medical care in this country and elsewhere, and, on the whole, which did a pretty poor job; but the theory of prepayment is very old, not at all new.

Q.—Has the Ross-Loos Clinic been successful?

Mr. Leahy:—In your opinion.

Mr. Lewin:—Yes, in your opinion.

The Witness:—Yes.

By Mr. Lewin:

Q.—What kind of professional reputation has it now with regard to the care that it renders?

A.—Well, of course, that becomes a matter of opinion. I find that many physicians in the neighborhood are inclined to be critical. I find that physicians who come from a distance and stay there and observe their work are inclined to the view that it is very satisfactory. I include myself in that group and think that the care given is, on the whole, something better than good care. Of course, there is prejudice, perhaps, on both sides. I think, on the other hand, that you can rely on the growth of the organization as evidence that they must have been providing a pretty satisfactory article or they would have failed to grow as they have. They are approaching a point now in their growth where I think they would be well advised to take no more patients. I believe there is a size to which any organization can grow where they might get themselves into administrative difficulties which would be very serious.

Q.—What have you to say of the ethics of a doctor who would accept a salary from such a group?

A.—There could be no ethical objection; there couldn't possibly be an ethical objection. The whole civilized world is on salary, 90 per cent of them, anyway. I don't understand that you gentlemen are unethical because you get paid a salary.

Mr. Leahy:—We are lucky when we get paid.

The Witness:—I think so myself. I was on a salary for twenty years until recently myself.

By Mr. Lewin:

Q.—Now, how about being on a salary with a prepayment group: Is there anything unethical about that?

A.—Why, no, of course not. You may think you are gambling, that you may not get your salary; but that is true of all of us. That has nothing to do with ethics; there is nothing unethical about it, certainly.

Q.—What other groups have you had personal acquaintance with?

A.—I have had some experience with the Trinity Hospital group of Little Rock, Ark., which is one of the oldest organizations of its kind in the country. I am not quite sure whether its beginnings preceded the Ross-Loos, but it is a matter of ten or more years ago since it was organized, in any event. I have been interested in observing the success of the organization and it is my opinion that it is extending very good service to those who are treated. And if you can make a thing work in the State of Arkansas it ought to work pretty nearly anywhere.

Q.—And did it work there?

A.—Yes, and it has been for some time rendering satisfactory service.

Q.—And has that both these features: group practice and prepayment, with salaried doctors?

A.—Yes.

STANACOLA

Q.—Now will you tell us something about the operation of any other group with which you are acquainted?

A.—Well, there is the Stanacola.

Q.—Where is that, and what is that plan?

A.—In Louisiana, at one of the big plants of the Standard Oil Company; and there the initiative came from the employees in the form of a group which made arrangements to obtain medical services. I am not quite sure, of course, just what part the Standard Oil Company played in organizing the group. The Standard Oil Company, and many other great corporations, have a medical organization for their whole organization, all their various activities; but, as a rule, it is their business to look out for the industrial feature of the company's activities and see that proper care is rendered in industrial compensation cases. But I am not quite sure that some of the officials of that company didn't suggest the plan. Here was a method, the solution of a problem which the companies did not want to undertake. The company, I think, assisted them more or less with the payment of rent and the furnishing of quarters, et cetera, things like that.

Q.—What would be the reason for a company assisting a group of employees in forming one of these medical groups?

A.—There are a good many companies who believe that the really complete and satisfactory care of their employees is to their own interest. Some companies have provided that care without any charge to such employees.

Q.—And would you say there had been a development in recent years toward more and more businesses encouraging plans of that character?

A.—Well, it would be very hard to say whether it was encouraged by the corporations or businesses or whether the initiative came from the people who were employed. Obviously, there must be a pretty large number of employees or this thing cannot be made to work satisfactorily.

Q.—Doctor, what is preventive medicine?

A.—Preventive medicine is that part of the practice of medicine which undertakes to prevent the occurrence of diseases. For instance, it is highly possible to assure that no child or adult would ever have smallpox, simply by vaccination. That is the old preventive. And from then on, the prevention of typhoid fever by inoculation. That was first proved in the Boer War, in 1888 and 1889. That was not known to us because our losses during the Spanish-American War from typhoid were staggering. And some time later, lockjaw tetanus, and then the prevention of diphtheria. It became possible around the early part of this century. Those are notorious examples of preventive medicine, so that diseases which used to take a very large toll of the population now take a very small number, and could take no toll at all, if preventive medicine was entirely carried out for all people.

Q.—Now, if one of these groups undertook to give complete medical care, would the employee or member have the right to this preventive medicine?

A.—Yes. That is one of the features of the prepayment plan, and I think, one of the most important.

Q.—Would you regard that feature as an asset to the employees of the company who were in such group?

A.—A very great asset.

Q.—Why is it an asset?

A.—Because the problem of employees being regularly present on the job is increasingly becoming important, and the employee's value to his employer is recognized as being in proportion to the man's ability to avoid loss of time through illness. That is as to the man himself. Now if the employee is worried because his children are sick that does not add to his ability as an effective worker. It doesn't make him do a good day's work.

ENDICOTT-JOHNSON PLAN

Q.—What other groups can you mention, successful groups, of this character?

A.—Of course a group which has been going on for many years is the Endicott-Johnson Company in Binghamton, N. Y.

Q.—What is that?

A.—They make shoes; and for many years, fifteen or more, have offered to their employees complete medical services, for which the company has paid; and they regard that as a good piece of business. It looked pretty expensive to me but undoubtedly has been a great service to their employees, and a very large proportion of the employees use the service, although they are under no compulsion to do so.

Q.—So you would say that there are, if I may say, some producer organizations in these groups and some consumer organizations in these groups?

A.—Yes, as I use the word, "producer" is an organization set up primarily by physicians, like the Ross-Loos group, in

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which a group of physicians decided to group themselves and offer to the community medical care on a prepayment basis; then what I call the consumer basis is one in which the initiative comes from the consumer, commonly known as the patient; a quasicooperative arrangement in which a number of individuals form an organization and then proceed to enter into an agreement of some kind with a group of physicians to provide medical care. Those are the two methods by which the thing may be started; and, more or less in the middle, is the industrial establishment for the care of its employees and sometimes for their dependents.

Q.—Reverting now for a moment to the proper standard for admission of doctors by a hospital to its courtesy staff, would there be any reason, in your opinion, for rejecting a doctor to the courtesy staff simply because he was identified with a prepayment plan?

A.—Oh, no, that would be very improper.

Q.—Now, would admission for the patients of these groups to hospitals be an important thing?

A.—Very important; it is essential. No group can properly offer medical care who cannot also assure the provision of hospital care.

GROUP HOSPITALIZATION PLANS

Q.—Are you familiar at all with a group, just a group hospitalization plan?

A.—Yes; they have been developing all over the country in recent years.

Q.—Is there any similarity between the group hospitalization plan and one of these medical groups you have been describing?

A.—Some similarity and some differences. The group hospitalization plan is an arrangement by which the corporation accepts subscriptions and then agrees with the hospital, or a hospital in the vicinity, to hospitalize and accept its patients as hospital patients for a fixed sum per diem for a certain amount of care. For instance, you may have a ward bed at a certain rate; you may have a bed in a three bed room at a certain rate, and so on. Most of those with which I am familiar do not undertake to provide private room care, though you may get it at a moderate additional charge.

Q.—Then a group hospitalization plan provides this insurance feature, or a feature like insurance?

A.—Yes, for hospital care only. It has nothing to do with medical care.

Q.—Is it possible for one of these medical groups to include in its scheme a group hospitalization plan and to have hospitalization facilities for its members, where necessary?

A.—Oh, yes. Ross-Loos has done it from the start and others have from the start included it in complete care. When we talk of it as complete care I think only of the medical care. Yet the bill may be for hospital care as well and really to use the word "medical care," you should include the hospital as well as the medical care, under the agreement with the subscriber.

(Thereupon, at 12:15 o'clock p. m., a recess was taken until 1 o'clock p. m. of the same day.)

AFTER RECESS

DIRECT EXAMINATION—Resumed

MILWAUKEE PLAN

By Mr. Lewin:

Q.—I would like to ask you whether or not you have any familiarity with the group medical centers at Milwaukee?

A.—I don't think I have enough to express any opinion; I have read their literature but I have not studied it. And as to the group medical center in Chicago my answer would be the same.

SOUTHERN PACIFIC R. R. PLAN

Q.—Have you any knowledge as to group practice in the large railway systems in the country?

A.—I have been somewhat familiar with the system of the Southern Pacific Railroad; with their experience with a large general hospital there in San Francisco. They have very widely scattered physicians all over the system. I have seen it working chiefly in the hospital where the more difficult and serious cases were sent. I used to go there quite often to see Dr. Lathrop Brown, who was one of their medical consultants.

Q.—What type of group practice would you regard that?

A.—That is group practice set up by a large corporation for the benefit of its employees. As I understand it, they don't deal with dependents, but they have a very wide system with railroad surgeons in different centers who can send their patients to the large hospital centers, if they think it necessary.

Q.—Has the railroad its own hospital or does it use private hospitals?

A.—In San Francisco it has a very large hospital of its own; I am not familiar with the situation along the railroad. I suppose they also use private hospitals.

Q.—Have other large railroads any such system with which you are familiar?

A.—I think it has been very common. I know of the Northern Pacific, which is one of the relatively earlier ones. I believe they are more common in the West and Middle West than in the East. I see relatively little of them in New England.

Q.—Would you think there was any justification for calling this type of practice "herd practice"?

A.—No, I don't think so; there is no herd involved.

Q.—Is it orderly?

A.—Oh, I think yes.

ADVANTAGES OF PREPAYMENT PLANS

Q.—Now I wish you will tell the jury in your own words what you regard as the advantages that emanate, if any, from this type of prepayment group practice.

A.—Well, you can divide it into two parts; the advantages which accrue, I think, always to the patient, the subscriber, and the advantages which accrue to the physician. To the patient the advantages seem to be very clear and very important. All of us, I think, with moderate incomes live constantly in dread of severe accident or illness, or prolonged accident or prolonged illness, as likely to entirely undermine our economic security. Here is a method by which that can be determined, under which they can be sure of getting complete care, depending for success only on the individual's ability to select a proper group; and in that connection the patient is confronted with the same problem in making his decision or choice of groups as he meets in his selection of a doctor. In other words, among groups as well as private individual doctors there are those which are very well conducted and others which are poorly conducted. But aside from this, group practice brings within his reach, the patient's reach, a good many articles, I should say, of medicine and medical care which he ordinarily does not get from a private practitioner. I made reference this morning to the question of preventive medicine. On a normal fee-for-service basis it would be impossible or impracticable to stop Jones on the street and say to him "You ought to have your children vaccinated." There is no question about the desirability of that. Yet if Jones said anything at all it would be probably to inquire about the cost, and very likely on finding out that it couldn't be done at a very reasonable expense he would decide to take the chance. He doesn't know what chance he is taking. It is a chance he shouldn't take at all. It is a chance concerning something of which he couldn't have any knowledge. Under an organization of group practice he gets that as a certainty, with his care for diseases, accidents, et cetera, as they turn up, and as a matter of course.

Again, I believe that in two periods of life pretty careful watching is necessary. Anybody will admit that children, in their early days, ought to be carefully watched; yet under the system of private practice we may be inclined to neglect this care which the child should have; you cannot see your way clear to pay for it. That diminishes as you are going through adolescence, and then, after middle life as people begin to walk into the sunset a great deal can be done to keep the machine from actually cracking up, so that they become dependent while still alive. The average man dreads the chance of being unable to work, and unable to earn, and still live. Many would sooner be dead. A good deal can be done by competent supervision to postpone the evil day and prolong man's working capacity. Those, in my opinion, are just some of the advantages from the point of view of the patient.

From the point of view of the physician, the advantages are various: In the first place, I suggested, they have ready access to their colleagues in the various fields of medicine; the specialist. There is no loss of time, no lost motion. They are at liberty to ask for consultations which they might hesitate to ask under normal conditions because of the expense to the patient. Here it is ready and available any time they think it would help them. They are at liberty to turn over a patient for a particular treatment to one of their colleagues without loss of time and without inquiring whether the man, that is, the patient, can afford it. The question of cost is eliminated, which makes the work of the physician easier and permits him many consultations which he could not charge a patient for.

Then I believe it is very important to him, the physician today, this opportunity to keep reasonably abreast of the progress in the specialized fields. He can keep abreast of his own field if he is reasonably industrious, but he falls down in those other

they supplied with patients in such an increasing number that they had a majority of the patients in the hospital; they may have the whole of it.

Q.—By giving the hospital those patients they defrayed the expenses of the hospital, but the hospital remained a local private institution?

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Q.—Has the Ross-Loos Clinic been successful?

Mr. Leahy:—In your opinion.

Mr. Lewin:—Yes, in your opinion.

The Witness:—Yes.

By Mr. Lewin:

Q.—What kind of professional reputation has it now with regard to the care that it renders?

A.—Well, of course, that becomes a matter of opinion. I find that many physicians in the neighborhood are inclined to be critical. I find that physicians who come from a distance and stay there and observe their work are inclined to the view that it is very satisfactory. I include myself in that group and think that the care given is, on the whole, something better than good care. Of course, there is prejudice, perhaps, on both sides. I think, on the other hand, that you can rely on the growth of the organization as evidence that they must have been providing a pretty satisfactory article or they would have failed to grow as they have. They are approaching a point now in their growth where I think they would be well advised to take no more patients. I believe there is a size to which any organization can grow where they might get themselves into administrative difficulties which would be very serious.

Q.—What have you to say of the ethics of a doctor who would accept a salary from such a group?

A.—There could be no ethical objection; there couldn't possibly be an ethical objection. The whole civilized world is on salary, 90 per cent of them, anyway. I don't understand that you gentlemen are unethical because you get paid a salary.

Mr. Leahy:—We are lucky when we get paid.

The Witness:—I think so myself. I was on a salary for twenty years until recently myself.

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Q.—Now, how about being on a salary with a prepayment group: Is there anything unethical about that?

A.—Why, no, of course not. You may think you are gambling, that you may not get your salary; but that is true of all of us. That has nothing to do with ethics; there is nothing unethical about it, certainly.

Q.—What other groups have you had personal acquaintance with?

A.—I have had some experience with the Trinity Hospital group of Little Rock, Ark., which is one of the oldest organizations of its kind in the country. I am not quite sure whether its beginnings preceded the Ross-Loos, but it is a matter of ten or more years ago since it was organized, in any event. I have been interested in observing the success of the organization and it is my opinion that it is extending very good service to those who are treated. And if you can make a thing work in the State of Arkansas it ought to work pretty nearly anywhere.

Q.—And did it work there?

A.—Yes, and it has been for some time rendering satisfactory service.

Q.—And has that both these features: group practice and prepayment, with salaried doctors?

A.—Yes.

STANACOLA

Q.—Now will you tell us something about the operation of any other group with which you are acquainted?

A.—Well, there is the Stanacola.

Q.—Where is that, and what is that plan?

A.—In Louisiana, at one of the big plants of the Standard Oil Company; and there the initiative came from the employees in the form of a group which made arrangements to obtain medical services. I am not quite sure, of course, just what part the Standard Oil Company played in organizing the group. The Standard Oil Company, and many other great corporations, have a medical organization for their whole organization, all their various activities; but, as a rule, it is their business to look out for the industrial feature of the company's activities and see that proper care is rendered in industrial compensation cases. But I am not quite sure that some of the officials of that company didn't suggest the plan. Here was a method, the solution of a problem which the companies did not want to undertake. The company, I think, assisted them more or less with the payment of rent and the furnishing of quarters, et cetera, things like that.

Q.—What would be the reason for a company assisting a group of employees in forming one of these medical groups?

A.—There are a good many companies who believe that the really complete and satisfactory care of their employees is to their own interest. Some companies have provided that care without any charge to such employees.

Q.—And would you say there had been a development in recent years toward more and more businesses encouraging plans of that character?

A.—Well, it would be very hard to say whether it was encouraged by the corporations or businesses or whether the initiative came from the people who were employed. Obviously, there must be a pretty large number of employees or this thing cannot be made to work satisfactorily.

Q.—Doctor, what is preventive medicine?

A.—Preventive medicine is that part of the practice of medicine which undertakes to prevent the occurrence of diseases. For instance, it is highly possible to assure that no child or adult would ever have smallpox, simply by vaccination. That is the old preventive. And from then on, the prevention of typhoid fever by inoculation. That was first proved in the Boer War, in 1888 and 1889. That was not known to us because our losses during the Spanish-American War from typhoid were staggering. And some time later, lockjaw tetanus, and then the prevention of diphtheria. It became possible around the early part of this century. Those are notorious examples of preventive medicine, so that diseases which used to take a very large toll of the population now take a very small number, and could take no toll at all, if preventive medicine was entirely carried out for all people.

Q.—Now, if one of these groups undertook to give complete medical care, would the employee or member have the right to this preventive medicine?

A.—Yes. That is one of the features of the prepayment plan, and I think, one of the most important.

Q.—Would you regard that feature as an asset to the employees of the company who were in such group?

A.—A very great asset.

Q.—Why is it an asset?

A.—Because the problem of employees being regularly present on the job is increasingly becoming important, and the employee's value to his employer is recognized as being in proportion to the man's ability to avoid loss of time through illness. That is as to the man himself. Now if the employee is worried because his children are sick that does not add to his ability as an effective worker. It doesn't make him do a good day's work.

ENDICOTT-JOHNSON PLAN

Q.—What other groups can you mention, successful groups, of this character?

A.—Of course a group which has been going on for many years is the Endicott-Johnson Company in Binghamton, N. Y.

Q.—What is that?

A.—They make shoes; and for many years, fifteen or more, have offered to their employees complete medical services, for which the company has paid; and they regard that as a good piece of business. It looked pretty expensive to me but undoubtedly has been a great service to their employees, and a very large proportion of the employees use the service, although they are under no compulsion to do so.

Q.—So you would say that there are, if I may say, some producer organizations in these groups and some consumer organizations in these groups?

A.—Yes, as I use the word, "producer" is an organization set up primarily by physicians, like the Ross-Loos group, in

which a group of physicians decided to group themselves and offer to the community medical care on a prepayment basis; then what I call the consumer basis is one in which the initiative comes from the consumer, commonly known as the patient; a quasicooperative arrangement in which a number of individuals form an organization and then proceed to enter into an agreement of some kind with a group of physicians to provide medical care. Those are the two methods by which the thing may be started; and, more or less in the middle, is the industrial establishment for the care of its employees and sometimes for their dependents.

Q.—Reverting now for a moment to the proper standard for admission of doctors by a hospital to its courtesy staff, would there be any reason, in your opinion, for rejecting a doctor to the courtesy staff simply because he was identified with a prepayment plan?

A.—Oh, no, that would be very improper.

Q.—Now, would admission for the patients of these groups to hospitals be an important thing?

A.—Very important; it is essential. No group can properly offer medical care who cannot also assure the provision of hospital care.

GROUP HOSPITALIZATION PLANS

Q.—Are you familiar at all with a group, just a group hospitalization plan?

A.—Yes; they have been developing all over the country in recent years.

Q.—Is there any similarity between the group hospitalization plan and one of these medical groups you have been describing?

A.—Some similarity and some differences. The group hospitalization plan is an arrangement by which the corporation accepts subscriptions and then agrees with the hospital, or a hospital in the vicinity, to hospitalize and accept its patients as hospital patients for a fixed sum per diem for a certain amount of care. For instance, you may have a ward bed at a certain rate; you may have a bed in a three bed room at a certain rate, and so on. Most of those with which I am familiar do not undertake to provide private room care, though you may get it at a moderate additional charge.

Q.—Then a group hospitalization plan provides this insurance feature, or a feature like insurance?

A.—Yes, for hospital care only. It has nothing to do with medical care.

Q.—Is it possible for one of these medical groups to include in its scheme a group hospitalization plan and to have hospitalization facilities for its members, where necessary?

A.—Oh, yes. Ross-Loos has done it from the start and others have from the start included it in complete care. When we talk of it as complete care I think only of the medical care. Yet the bill may be for hospital care as well and really to use the word "medical care," you should include the hospital as well as the medical care, under the agreement with the subscriber.

(Thereupon, at 12:15 o'clock p. m., a recess was taken until 1 o'clock p. m. of the same day.)

AFTER RECESS

DIRECT EXAMINATION—Resumed

MILWAUKEE PLAN

By Mr. Lewin:

Q.—I would like to ask you whether or not you have any familiarity with the group medical centers at Milwaukee?

A.—I don't think I have enough to express any opinion; I have read their literature but I have not studied it. And as to the group medical center in Chicago my answer would be the same.

SOUTHERN PACIFIC R. R. PLAN

Q.—Have you any knowledge as to group practice in the large railway systems in the country?

A.—I have been somewhat familiar with the system of the Southern Pacific Railroad; with their experience with a large general hospital there in San Francisco. They have very widely scattered physicians all over the system. I have seen it working chiefly in the hospital where the more difficult and serious cases were sent. I used to go there quite often to see Dr. Lathrop Brown, who was one of their medical consultants.

Q.—What type of group practice would you regard that?

A.—That is group practice set up by a large corporation for the benefit of its employees. As I understand it, they don't deal with dependents, but they have a very wide system with railroad surgeons in different centers who can send their patients to the large hospital centers, if they think it necessary.

Q.—Has the railroad its own hospital or does it use private hospitals?

A.—In San Francisco it has a very large hospital of its own; I am not familiar with the situation along the railroad. I suppose they also use private hospitals.

Q.—Have other large railroads any such system with which you are familiar?

A.—I think it has been very common. I know of the Northern Pacific, which is one of the relatively earlier ones. I believe they are more common in the West and Middle West than in the East. I see relatively little of them in New England.

Q.—Would you think there was any justification for calling this type of practice "herd practice"?

A.—No, I don't think so; there is no herd involved.

Q.—Is it orderly?

A.—Oh, I think yes.

ADVANTAGES OF PREPAYMENT PLANS

Q.—Now I wish you will tell the jury in your own words what you regard as the advantages that emanate, if any, from this type of prepayment group practice.

A.—Well, you can divide it into two parts; the advantages which accrue, I think, always to the patient, the subscriber, and the advantages which accrue to the physician. To the patient the advantages seem to be very clear and very important. All of us, I think, with moderate incomes live constantly in dread of severe accident or illness, or prolonged accident or prolonged illness, as likely to entirely undermine our economic security. Here is a method by which that can be determined, under which they can be sure of getting complete care, depending for success only on the individual's ability to select a proper group; and in that connection the patient is confronted with the same problem in making his decision or choice of groups as he meets in his selection of a doctor. In other words, among groups as well as private individual doctors there are those which are very well conducted and others which are poorly conducted. But aside from this, group practice brings within his reach, the patient's reach, a good many articles, I should say, of medicine and medical care which he ordinarily does not get from a private practitioner. I made reference this morning to the question of preventive medicine. On a normal fee-for-service basis it would be impossible or impracticable to stop Jones on the street and say to him "You ought to have your children vaccinated." There is no question about the desirability of that. Yet if Jones said anything at all it would be probably to inquire about the cost, and very likely on finding out that it couldn't be done at a very reasonable expense he would decide to take the chance. He doesn't know what chance he is taking. It is a chance he shouldn't take at all. It is a chance concerning something of which he couldn't have any knowledge. Under an organization of group practice he gets that as a certainty, with his care for diseases, accidents, et cetera, as they turn up, and as a matter of course.

Again, I believe that in two periods of life pretty careful watching is necessary. Anybody will admit that children, in their early days, ought to be carefully watched; yet under the system of private practice we may be inclined to neglect this care which the child should have; you cannot see your way clear to pay for it. That diminishes as you are going through adolescence, and then, after middle life as people begin to walk into the sunset a great deal can be done to keep the machine from actually cracking up, so that they become dependent while still alive. The average man dreads the chance of being unable to work, and unable to earn, and still live. Many would sooner be dead. A good deal can be done by competent supervision to postpone the evil day and prolong man's working capacity. Those, in my opinion, are just some of the advantages from the point of view of the patient.

From the point of view of the physician, the advantages are various: In the first place, I suggested, they have ready access to their colleagues in the various fields of medicine; the specialist. There is no loss of time, no lost motion. They are at liberty to ask for consultations which they might hesitate to ask under normal conditions because of the expense to the patient. Here it is ready and available any time they think it would help them. They are at liberty to turn over a patient for a particular treatment to one of their colleagues without loss of time and without inquiring whether the man, that is, the patient, can afford it. The question of cost is eliminated, which makes the work of the physician easier and permits him many consultations which he could not charge a patient for.

Then I believe it is very important to him, the physician today, this opportunity to keep reasonably abreast of the progress in the specialized fields. He can keep abreast of his own field if he is reasonably industrious, but he falls down in those other

they supplied with patients in such an increasing number that they had a majority of the patients in the hospital; they may have the whole of it.

Q.—By giving the hospital those patients they defrayed the expenses of the hospital, but the hospital remained a local private institution?

A.—Yes. For a good many years they used only one hospital, and I think they had some working agreement with that hospital that all patients would go to that hospital. Now, the thing has spread over a very large area; the city of Los Angeles reaches over a wide area, for miles and miles. They have substations too, now, where they have a physician and a nurse, and a regional office, and patients may go there with conditions that do not require complicated treatment. In other words, it is almost the situation of the general physician, only he is part of the organization and on a fixed salary income. Very early, I think almost at the start, they built themselves a clinical building so that they would have, as has the Mayo Clinic, all their organization collected in one place, so that now although it is spread out into the surrounding country all the important difficult work is done in the clinic building.

Q.—Has this prepayment feature sprung up as a development in social philosophy only since 1933?

A.—Oh, no; the theory of prepayment, of course, goes back into the days of the British Friendly Societies; has been going on for more than a century. It was evolved in cases of large practice, and the principles and theory is present in the various forms of contracts for medical care in this country and elsewhere, and, on the whole, which did a pretty poor job; but the theory of prepayment is very old, not at all new.

Q.—Has the Ross-Loos Clinic been successful?

Mr. Leahy:—In your opinion.

Mr. Lewin:—Yes, in your opinion.

The Witness:—Yes.

By Mr. Lewin:

Q.—What kind of professional reputation has it now with regard to the care that it renders?

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Then I believe it is very important to him, the physician today, this opportunity to keep reasonably abreast of the progress in the specialized fields. He can keep abreast of his own field if he is reasonably industrious, but he falls down in those other

fields in which progress is constantly being made, unless he has ready access to, and discussion with, his colleagues. It keeps his knowledge well rounded.

Then I think for many physicians—I suspect for an increasing number as time goes on—the knowledge that he will have a fixed income is not a small matter. Many physicians are in the greatest doubt as to what their income will be: whether it will be sufficient to support their families. From the point of view of the physician I know of no method whereby you can so successfully introduce immediately to the practice of medicine the young man as he comes from the hospital, as that provided by a regular income. It is a normal procedure in hospitals for young men to be selected and for them to be carried on and along until, after they have worked under the supervision of the staff they are given permanent positions. The well trained young physician today is a very capable person as compared with what he was in my day. He doesn't have to learn so much by practicing on the patient as he has had his experience before tarting out, but he is likely to have in the earlier days a great deal of spare time which his patients don't demand, and he has to use it. I have seen a great many young physicians who have gotten into very undesirable states of mind because they have never enough work to do. They have an expensive education on which they have expended their own money or money of their family, borrowed money, and they are not using it. At that age they are people with youth, of great energy and driving power, and they have this talent and ability to employ. I know of no method whereby it can be so successfully used as in group practice.

ADVANTAGES OF GROUP PRACTICE

Q.—Is there any advantage resulting from that group practice in the way of supervision to them from this group staff?

A.—Yes, as I pointed out, the normal procedure of the great voluntary hospitals is to take on younger men, carry them along and, as they show capacity, permit them to move up; if they demonstrate no capacity, are lazy, they slip them out of the way. I am satisfied that the present system in that regard should continue to a certain extent and that supervision should not be lost. To get supervision in a hospital in the old days if there was anybody around who wasn't too busy the young man might get hold of him and do something under his supervision. This method which I speak of of having the younger men come into the hospitals under supervision is the method under which the staff in Mayo and at Michigan have been increased.

Q.—And there are qualified doctors to man group practice, in your opinion?

A.—I think so. I see their correspondence. I have communications from a pretty large number of younger men who want my advice as to how they can associate themselves with group practice, and my opinion as to the various groups.

Q.—Would the quality of medical care given by these groups be inferior to the average care gotten on a fee-for-service basis?

A.—I don't see how you can possibly generalize and say that every organized group would give care superior to the ordinary care, or that the reverse would be true. As I have said, some groups, like individual physicians, dispense an unsatisfactory article and that is no different from the situation which has always existed, in the case of physicians. On the whole it would probably be easier to choose a capable group than it is to choose physicians and then pass on to a variety of specialists.

Q.—So it depends on the individual physician and not on the type of practice in which he is engaged?

A.—I think in a group you stand a better chance of getting a good article.

Q.—Do you think that the fact that the doctors receive a salary has any effect on the working conditions under which they operate, and the quality of care they are able to give?

A.—My professional life has been divided almost exactly into two parts: nineteen years in private, independent practice, and about nineteen years in group practice. I have no hesitation in saying that during the years when I was in the University of Michigan in a group, on a salary and in the clinic that the care that I gave was of an entirely better quality than that which I gave in private practice. I could be entirely frank and honest. It made no difference to me whether I fitted in with the precise whims of the patient or not. I had no fear that if I told the patient the truth I would lose the patient. I think that is more or less in the background of every private physician in his treatment of the patient. We are afraid that if we say to Jones that he is behaving like a jackass, Jones will go to somebody else, whereas in a group you are at liberty to and do tell the patient the truth. I think we are more frank with the patient. Then I think the ready access to consultants makes you feel very much more secure in relation to your work, so that from my own personal experience I am led inevitably to the conclusion I can give better service in a group than I can as an individual practitioner, even with hospital privileges.

Q.—Would you feel that the doctor who engaged in this type of practice was prevented thereby from having that proper relationship with his patients that he should have?

A.—Oh, no. The relation between doctor and patient is between the doctor and the patient; and doesn't depend on the type of organization. It depends on the wisdom and humanity of the physician and his proper relation to the patient.

Q.—Is there necessarily any lay interference from the laymen who are handling the business side of the group?

A.—Not necessarily. It may occur, of course, and I think that is one of the things with regard to which the medical profession ought to give its advice very freely to be very sure that the lay management deals with the things with which it has capacity, and leaves to trained experts decisions in matters of medicine and things for which it has special knowledge and ability.

Q.—Is the problem the same as it is with the hospitals where you have a lay board of trustees, and a medical staff?

A.—I don't see any difference; the relationship has gone on over two centuries.

Q.—Is there any more reason for the lay board to interfere in this group practice than there is for it to interfere in the conduct of the affairs of the ordinary hospital?

A.—I think it is possible that there is. I think it is possible that you take a group, for instance, take a cooperative group, which decides to undertake the care of its members through the medium of a group of physicians. Their relation is a little different. It is a little different from the relationship of the hospital trustee, who ordinarily isn't personally involved. I think there is a little danger that the cooperative will think of medical care as it thinks of buying commodities, and try to get the same article at a little lower price. There is nothing more worthless in the world, and the danger is that the laymen may not recognize that point. That is a point upon which I think well advised bodies of physicians can produce a controlling influence, and should do so.

Q.—Would you regard the fact that the lay president of one of these groups, charged with the business affairs of it, wrote a letter to the hospitals telling the hospitals the group would like access to these hospitals for its physicians, as an example of improper lay interference in medical matters?

A.—No, he is simply asking for his group the ordinary privileges which might ordinarily be obtained for them.

Q.—Would you regard a reasonably worded letter coming from the president along that line as something that was arrogant?

A.—It could have been written in an arrogant way. The mere fact of writing the letter—certainly there wouldn't be anything arrogant in doing that. There is nothing wrong in trying to make sound arrangements with a hospital.

Q.—Would there be anything in such a letter which should offend or be likely to offend those hospitals?

A.—I am inclined to say that if hospitals could be offended that way you had better get new management.

Q.—How about the confidential relationship that exists generally between patients and hospitals? What effect would this group practice on a prepayment basis have upon that situation?

A.—Absolutely none.

Q.—Might there be some danger that the records in the clinics, concerning the patient, might come to light in some way and get into unauthorized hands?

A.—It is practically the same situation that has occurred in the great hospitals for a great many years. Those records are confidential communications, and it is perfectly clear under the law that they may not be at the disposal of anybody else without the permission of the patient. It is precisely the situation that has existed in the hospitals. I am aware that some records have been improperly shown, but I am also aware that private physicians have also allowed access to those records.

Q.—So the group practice on the prepayment basis has no bearing on that problem?

A.—No, I think not.

Q.—While you were in group practice, have you suffered any difficulty in preserving the secrets of your patients as distinguished from incidents of that character occurring while you were practicing on a fee-for-service basis?

A.—No, except this: Occasionally I tried to get a record that they wouldn't give because my name was not on the folder and I had to get another doctor to say I was a proper person to look at it.

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FREE CHOICE OF PHYSICIAN

Q.—What is meant in the medical world by the phrase "free choice of physicians"?

A.—I think it is ordinarily used to mean that the individual looking for medical care may take any physician whose services he thinks he desires and in regard to whose capacity he has heard on what he believes to be good evidence that he is a good physician. I take that that is the doctrine of reasonable choice.

Q.—What bearing has group practice on a prepayment basis upon preserving free choice of physicians?

A.—I am inclined to believe that it preserves all the elements of freedom that are worth preserving. Of course, I don't myself believe that the average layman is well equipped to make the choice of physician where there are a considerable number of men available. A different condition may occur where there are not many physicians in the neighborhood, but it is very difficult in selecting a physician for the layman at times to make a good choice, because he has little or no knowledge of the article which he is trying to buy, and there is no satisfactory method by which he can find out its quality. He is depending on what is generally common gossip. Jones says that Brown is a great physician. That is a matter of opinion, and Jones's opinion may not be a very good one. It may be that he has not seen very much of him professionally. It may be that they are two personalities who get along extremely well, that Jones likes him, and so forth, but as a matter of fact Jones may be mistaken in believing that Brown is a good physician.

I doubt myself the accuracy of freedom of choice. I think the average layman will get a better article in group service if he makes his choice in hospitals and groups. Now, in Boston, there are three or four large hospitals between which a patient might make a choice, say the Barsworth, and the Massachusetts General. If an individual requires hospitalization he makes a choice from one of those hospitals and having done that he feels that he has put himself in good hands. That has always occurred in the Mayo Clinic. The patient don't go there to see any particular physician. They have reason to believe the Mayo Clinic provides a good article of care and when they get there they normally are assigned to a physician, more or less in rotation, according to who is busy; and always to a general physician. I think that kind of choice which the average layman has is more likely to be right than if he undertakes to seek individual physicians and then the consultant.

Q.—So you don't define this freedom of choice as a capricious one; you define it as being an informed choice?

A.—I should like to provide a situation where it might be an informed choice. I think that they hit upon this method at a time when conditions were not what they are today and that the patient's selection under present day conditions is becoming less and less accurate.

Q.—Even if freedom of choice should be defined to be a capricious freedom of choice, could you tell us whether or not there is anything in group practice which could interfere with that?

A.—No, I don't think so, because in most well organized groups there remains a great deal of choice. Normally a patient is referred to one of the general physicians. Now it is within my knowledge that patients don't always get on with the particular physician. He will say, "I would rather see somebody else." "All right," he is assigned to some one else, or referred to some one else; he has made his choice in that group.

Q.—Well, is he limited to that group? If he desires to consult with another physician outside the group may he not do so?

A.—There is no method by which you can limit him.

Q.—So that he can consult any physician with equal freedom whether he is in the group or out of the group?

A.—I don't see it alters the situation in that regard except, if anything, for the better.

Q.—Would you say that a patient who is told by a hospital that he or she may not have the doctor that he or she wants enjoys the freedom of choice?

A.—No. Obviously not.

Q.—For instance, if one of these members of a group goes to a hospital and is told by the hospital "You cannot have your group doctor, you have got to have our staff doctor," do you think that would be a limitation of freedom of choice?

A.—Oh, quite.

Q.—Suppose a regulation were adopted—

THE COURT:—Mr. Lewin, may I suggest that some of your questions do not seem to do with expert testimony at all, or expert opinion, they are ordinary conclusions on which any person would exercise his judgment. I am only suggesting it to save time. This last question of yours is not one that—it is a matter of understanding of words, ordinary common understanding of words.

Mr. Lewin:—But, your Honor, there is a phrase that is used in this business called "freedom of choice." It is one of the issues here; it was made so yesterday.

THE COURT:—I understand that, but when you ask any person whether there is freedom of choice, that is not expert opinion.

Mr. Lewin:—Well, I think Dr. Cabot would know that and the jury would know which it was.

THE COURT:—We have to leave the jury something to determine.

Mr. Lewin:—Oh, yes. They have the issue here to determine.

THE COURT:—They ought to be able to determine the ordinary meaning of words. We should save as much time as possible.

By Mr. Lewin:

Q.—Dr. Cabot, if the American Medical Association takes upon itself to pass a rule that no doctor shall treat their patients in any of its approved hospitals except its own members, does that or not limit and interfere with the freedom of choice?

A.—It does.

GROUP HEALTH ASSOCIATION, INC.

Q.—Doctor, are you familiar with Group Health Association, Inc.?

A.—Well, I have seen something of their workings. I knew little of the plans in advance, on paper, so to speak, and expressed some opinions, and I did come down here and go over the layout with their staff. I shouldn't regard myself as having a very complete knowledge.

Q.—Could you tell the jury about when you were asked to look into the question for Group Health, and who asked you to do it?

A.—Well, it is hard for me to remember exactly. It must have been in 1937 that I had some correspondence with a Mr. Zimmerman, I think.

Q.—Yes.

A.—And saw him here.

I had some correspondence with a Mr.—well, either Fitz or Kirkpatrick.

Mr. Lewin:—Kirkpatrick.

The Witness: Yes. Then, I did come down here and went around and just saw the staff and saw them at work, one day, and had some discussion at that time with members, I suppose, of the board of trustees.

By Mr. Lewin:

Q.—In which of these categories of prepayment basis does Group Health fall?

A.—I would call it the consumer type.

Q.—Consumer type?

A.—Yes. In which the initiative comes from a group of patients, consumers of this medical care, who then undertake to arrange for a medical group which will do the work.

Q.—Would there be anything wrong or inappropriate in calling it a consumer cooperative?

A.—No. I should think that would be reasonably understood, what it was intended to do.

Q.—Can you descril e it a little more fully for the jury?

A.—Well, I am not sure of the accuracy of my information. I was interested more to see whether this outfit with a clinic seemed to me to be doing a decent job than the questions of organization, which didn't seem to be much of my business.

Q.—What conclusion did you come to whether it was doing a good, decent job?

A.—I came to the conclusion at that time that they were equipped to do satisfactory work and that the four or five physicians whom I actually saw at work in seeing patients were doing very well.

Q.—Did you see the clinic itself?

A.—Oh, yes.

Q.—Here in the city of Washington?

A.—Oh, yes.

Q.—Did you inspect this equipment?

A.—Oh, yes. That is just exactly what I did.

Q.—How did you regard its equipment and the layout for its clinic, its facilities?

A.—Well, at that time, as I saw it, with the flow of patients, it seemed to me to be very well regulated, not excessive. I didn't find overcrowded waiting rooms, and the thing seemed to be moving smoothly; and I assume that it was a fair sample of an average day; they had at that time the proper space, and I might say the proper equipment to deal with that group of patients.

Q.—Did they have laboratories and x-ray machines and things of that sort?

A.—Yes.

Q.—And were there doctors on the group staff making common use of these facilities?

A.—Oh, yes.

Q.—On the whole would you say that Group Health Association was fairly representative of the successful group practice on a prepayment basis such as you have described?

Mr. Leahy:—I object, your Honor.

THE COURT:—Objection sustained.

Mr. Lewin:—All right, your Honor.

By Mr. Lewin:

Q.—What would you say the effective group practice on the prepayment basis has done for the cost of medical care to the members of such groups?

A.—If properly organized I think it is certainly a method of diminishing the average cost. In a year it may not diminish the cost, but on the other hand, in another year it may be only a very small fraction of the cost which that patient, or some of them, would have incurred. On the average, taking it over a period of years I am satisfied that that method of payment would decrease the costs of the average family to obtain good medical care.

Q.—Is there any reason why group practicing doctors in clinics of this character will not keep themselves subject to call for their patients, so that they will be available to render care to their patients at all hours?

Mr. Leahy:—I object to that. It is impossible to answer it.

Mr. Lewin:—Now, your Honor, Mr. Leahy characterized this clinic as a 5 o'clock clinic and he wanted this jury to understand that all these groups that his organization opposes quit at 5 o'clock.

THE COURT:—I will permit the question.

Mr. Lewin:—You invited this.

Mr. Leahy:—Well, what are you getting mad about?

Mr. Lewin:—I am not getting mad. If you will permit me, I am just a little indignant.

Mr. Leahy:—Why, this is a very pleasant little gathering.

THE COURT:—When I spoke of outbursts a while ago I had in mind, too, this kind.

Mr. Lewin:—I didn't expect to get that kind of objection to a question he brought up himself.

THE COURT:—After I have ruled on a question that ought to end the discussion. I ruled on that question and said that he could answer it.

Mr. Leahy:—Could I hear the question?

THE COURT:—The objection is overruled. It was overruled some time ago.

Mr. Leahy:—May I hear it?

(The question referred to is read by the reporter as follows:)

"Is there any reason why group practicing doctors in clinics of this character will not keep themselves subject to call for their patients, so that they will be available to render care to their patients at all hours?"

THE COURT:—The objection is overruled. I understand that question to mean whether there is necessarily anything in the organization of such a group which would prevent that.

Mr. Leahy:—Was that the purpose of the question?

Mr. Lewin:—Oh, yes. I think that is perfectly obvious, and I am obliged to your Honor for straightening my brother out.

Mr. Leahy:—He didn't straighten me out at all.

Mr. Lewin:—Don't get so mad about it.

THE COURT:—Give the doctor a chance.

The Witness:—There is certainly nothing inherent in the group, and my experience with the group is, it is easier to get them after hours than it is the practicing physician.

By Mr. Lewin:

Q.—Did you see anything when you inspected Group Health and its operations which would entitle it to this epithet "5 o'clock clinic"?

A.—No—

THE COURT:—I don't believe I would go into that.

Mr. Leahy:—I have no objection.

THE COURT:—I have objected to taking up unnecessary time.

Mr. Lewin:—Your Honor permitted it yesterday.

THE COURT:—I permitted opening statements by you and counsel for the defense, but I don't permit you to take up now the opening statement for the defense. He was stating his defense.

Mr. Lewin:—Yes, your Honor.

THE COURT:—When they have put in their evidence in support of that, then if there is any occasion for rebuttal, we will have it. But we are not going to take up the rebuttal of this case at this time.

Mr. Kelleher:—But, your Honor, don't you think we should be permitted to describe the organization?

THE COURT:—If I thought you should be permitted to describe the organization I would have permitted it.

Mr. Lewin:—I am sorry then. I thought it was proper.

By Mr. Lewin:

Q.—Dr. Cabot, you told us that you for many years have been a member of the A. M. A.

A.—Yes. It must have been forty-two years, I guess.

Q.—What is the A. M. A.?

(Dr. Cabot answered many questions regarding the American Medical Association.)

Q.—Could you name some of the bureaus and councils?

A.—Well, there is the Bureau of Legal Medicine, and I think there is a Bureau of Economics, and perhaps something else put on to it, but it deals with the economic problems.

Q.—Isn't that the Bureau of Medical Economics?

A.—Well, I think so, yes.

Q.—Is there anything novel or laughable about the use of the term "medical economics"?

Mr. Leahy:—I object.

THE COURT:—Objection sustained.

Mr. Lewin:—I have suggested to you two or three times that I don't think it is proper for you now to enter into a prosecution of the language of defense counsel in his statement.

Mr. Lewin:—Oh, I thought he entered into a prosecution of my language.

THE COURT:—Well, now, I am going to insist that you refrain from that.

Mr. Lewin:—I will.

THE COURT:—And of course my ruling with respect to you will also apply to the defense if they should assume such a method of examination. I don't think it is proper.

Mr. Lewin:—I would like to know whether the term "medical economics" is a term which has been used for a number of years.

THE COURT:—That wasn't your question. You may ask that.

Mr. Lewin:—May I ask that?

THE COURT:—Yes.

The Witness:—Yes. I wouldn't say how many but I should think for more than twenty years.

By Mr. Lewin:

Q.—What generally is embraced in the science or study of medical economics?

A.—Well, the economic problems which are peculiarly applicable or more than ordinarily applicable to those problems which come up in the practice of medicine.

Q.—Has the A. M. A. a judicial council?

A.—Yes. Yes.

Q.—What is the function of the judicial council?

A.—Well, they pass on questions referred to them by their state societies in which the state society has taken action and they would like to have action reviewed or approved or disapproved. I don't think the judicial council can deal with problems of an individual except brought through a constituent assembly. Then I think they frequently render opinions at the request of the House of Delegates on problems on which they want an opinion on semijudicial questions.

Mr. Lewin:—I don't want to offend against your Honor's ruling at all here. I understand this issue is one of substance and not language.

THE COURT:—Just put your question.

By Mr. Lewin:

Q.—I want to put this question to you: I want to know whether the A. M. A. has any control over who remains a member of the local medical societies.

A.—I should not think so in the first instance. The problem of the local medical society is to deal with its own members. Then either party aggrieved I think may appeal that decision to the judicial council.

Q.—And is that decision of the judicial council as to whether that man may remain a member or not, binding on the local society?

A.—Well, I suppose it would be assumed to be.

Mr. Lewin:—Yes.

Now, at this time, your Honor, I would like to offer in evidence a stipulation of counsel as to the introduction in evidence of certain documents. I will ask that that be given a number as an exhibit.

(The document entitled "Stipulation" was marked Government Exhibit No. *2* for identification.)

Mr. Lewin:—I should now like to offer in evidence certain portions of a pamphlet entitled "Proceedings of the House of Delegates of the American Medical Association, the 89th Annual Session held at San Francisco, California, June 1938," and the specific portions I wish to offer in evidence are the printed material appearing on column *2* of page 7, beginning about the

middle of the page, beginning "The general work of the Association" and running through the first two paragraphs in the second column on page 8 in the subject dealing with THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. I should like also to offer from the same volume the report of the same proceedings offered by the Bureau of Medical Economics. That appears on page 30. And I offer such portions of the document that show the adoption of these reports by the reference committee.

Mr. Lewin:—From this report of the proceedings of the House of Delegates I will read the following:

AFTER RECESS

"The general work of the Association. The year covered in this report"—that is 1938—"of the Board of Trustees has been characterized by a very notable expansion in the activities of the various councils, bureaus and departments of the Association until, at times, available facilities have been seriously strained. A constantly growing interest on the part of the general membership in changing social conditions; increased efficiency of medical organization in counties and states throughout the nation; a more active and intelligent interest on the part of the public in matters pertaining to public health and medical service; legislative activities in the states and in the federal government; the consideration of important questions pertaining to medical education, hospital operations and the extension of public health programs; greater financial and administrative participation on the part of the federal government in public health affairs in states and in communities; proposals for the development of medical and hospital service plans for the benefit of the members of low income groups and actual operation of such plans, and a notable increase in the number of members of the Association together with many other important factors have brought into the headquarters offices a veritable flood of inquiries and demands for information and service. An earnest effort has been made to meet such demands as fully and as helpfully as possible. (58-59) (60).

"Business Operations.

"The official Report of the Treasurer and the official report of the Auditors are submitted to the House of Delegates as a part of this report of the Board of Trustees.

"The gross earnings for the year ended Dec. 31, 1937, amounted to $1,654,203.74 as compared with $1,547,218.23 in 1936. Operating expenses were $982,830.10 as compared with $909,417.95 in the preceding year. Association expenses including expenditures incident to the operations of councils, bureaus and departments amounted to $431,635.63 as compared with $411,028.93 in 1936, while miscellaneous expenses for the year 1937 including insurance and taxes, building expenses and depreciation, fuel, legal services, and the cost of sundry publications amounted to $218,601.19 as compared with $209,382.37 in 1936. The net income for the year was $122,242.92 of which sum $83,563.74 represented income from investments, so that the actual net operating income was $38,679.18.

"While only a few of the bonds owned by the Association have defaulted in the payment of interest, there has been a rather serious depreciation in the market value of some of the securities held. The Board of Trustees, the Treasurer and the General Manager of the Association have sought the best available advice with respect to investment of the Association's funds. In accordance with the situation that generally prevails, the average interest return on invested funds has been decreased because of the substitution of securities bearing lower interest rates than those which formerly obtained.

"The payment of wages and salaries, exclusive of those involved in the operation of councils and bureaus, amounted to $460,182.01 in 1937 as against $443,693.17 in 1936. Increased labor costs in effect during the latter part of the year accounted for most of the increase in this item, and notification has already been received to the effect that these costs will be further increased during the current year. The cost of paper in 1937 was $241,663.85 as compared with $208,922.37 in the preceding year. These costs would have been considerably larger except for the fact that the fullest possible advantage was taken of the opportunity to purchase paper stock before material increased in the market price went into effect. The sum of $97,274.89 was expended for postage in 1937 as against $92,123.08 in 1936.

"Fellowship dues and subscriptions paid in 1937 amounted to $670,170.31 as compared with $638,243.18 in 1936, the increase being due principally to increased circulation of THE JOURNAL and to a rather notable increase in the number of Fellows enrolled. Total receipts from the sale of advertising space in Association publications were $841,042.57 as against $780,299.01 in 1936.

"The number of employees at the time of the preparation of this report was 616.

"The purchase of some new machinery and equipment, contemplated when the last annual report of the Board of Trustees was submitted to the House of Delegates, was deferred, in part for the reason that some of the machinery that must be purchased will have to be newly constructed and in part because some of the older machinery which it had been intended to discard was repaired or partially rebuilt so as to extend its usefulness. It will be necessary to install some new machinery in the printing department during the current year. Increased activities of the councils, bureaus and departments of the Association have required the purchase of a considerable amount of new office material (58-59) (60).

"In the Report of the Treasurer and in the Report of the Auditors, submitted herewith, will be found more fully itemized statements of income and expenditure.

"Summary.

"Gross earnings and miscellaneous income were larger in 1937 than 1936, while operating and miscellaneous expenses were also considerably larger. Income from investments was slightly larger than in 1936. The net income for the year was $122,242.92, of which amount $83,563.74 represented interest on investments and $7,453.20 represented miscellaneous income.

"The Association Building.

"The experience of the past year has fully justified the action taken by the Board of Trustees whereby the entire building was remodeled and two new stories and an assembly hall were added. Better working conditions have been afforded in all departments, and it has been possible by reason of building expansion to bring closer together councils and bureaus whose work is closely correlated and thereby to avoid unnecessary duplication of effort and to increase efficiency.

"Many commendatory expressions have been received concerning the beauty of the Association's building as it now stands. The Board of Trustees would urge the members of the House of Delegates and the members and Fellows of the Association who may find opportunity to do so to visit the headquarters offices to see at first hand the nature and the scope of the work that is being prosecuted there. (59) (60).

"THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

"The place held by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in the field of medical periodicals is now so well established that it is unnecessary to offer comment on this point. Nevertheless, the publication has not been static. It has developed a new series of articles on the relationship of the pharmacopeia and the physician. It has continued its campaign against mortality from typhoid and from diphtheria and has reestablished the campaign against Fourth of July accidents.

"The publication formerly called the *Bulletin of the American Medical Association* is now fully incorporated in THE JOURNAL as the Organization Section. Here special attention is given to problems of organization, to medical economics, to reports of activities of various councils, bureaus and departments, and to the work of the Woman's Auxiliary. The value of this week by week circulation of important information in the field of economics and of organization for the maintenance of interest of the individual physician cannot be overestimated. Because of the significance of this material, the Board of Trustees would recommend that it be placed in the center of THE JOURNAL, and incorporated as a regular feature on medical economics."

I won't bother now to read the other portion of it that I introduced in evidence; and I will introduce now under the same stipulation—will you mark this, please?

(Pamphlet entitled "Proceedings of the House of Delegates of the American Medical Association, the 89th Annual Session Held at San Francisco, California, June 13-17, 1938" was marked Government's Exhibit 3, and received in evidence.)

Mr. Lewin:—I should now like to offer from this volume entitled "Proceedings of the House of Delegates, 1932," certain portions which describe the Bureau of Medical Economics, and the report of the secretary which deals with the Mundt resolution; and the reference committee reports showing the adoption of such reports from the reference committee.

Mr. Lewin:—I should like to offer also certain portions of the proceedings of the House of Delegates of the A. M. A. for the year 1932. That is dealing with the Bureau of Medical Economics, on pages 15 to 18 of that report.

Mr. Lewin:—I withdraw Government's Exhibit No. 4 and my offer to prove it, because I am now authorized by counsel for defense to state to the jury that the following allegation of the indictment is admitted by all of the defendants, without qualification, to be true:

"Defendant American Medical Association maintains a bureau known as the Bureau of Medical Economics which concerns itself with economic organization of the practice of medicine."

Mr. Lewin:—I now offer in evidence, under the same stipulation, excerpts from the Proceedings of the House of Delegates of the American Medical Association, 1931, appearing on page 4 thereof and headed "Bureau of Medical Economics," and also appearing on page 24 thereof, headed "Hospital and Health Associations."

Is there any objection?

Mr. Leahy:—May we approach the bench, if your Honor please?

THE COURT:—Yes.

(Counsel for the respective parties approached the bench and conferred with THE COURT in a low tone of voice.)

Mr. Lewin:—The offer of the excerpts appearing on pages 4 and 24 of Government Exhibit No. 5 is made only as against the defendant American Medical Association at this time.

THE COURT:—It will be admitted on that basis.

(Excerpts from Proceedings of the House of Delegates, 1931, pages 4 and 24 thereof, were marked U. S. Exhibit No. 5 and received in evidence.)

Mr. Lewin (reading from U. S. Exhibit No. 5):—

BUREAU OF MEDICAL ECONOMICS

The Bureau of Medical Economics is just being organized and ultimately will have all available information regarding the cost of medical care. So much misinformation regarding economics is being broadcast that it is certainly our obligation and responsibility to set this aright. This means a great deal of study and work and is a task for those who have had much experience in these activities. There are few actual practitioners of medicine on the five year committee on the costs of medical care. The statistical work of the committee has been tremendous, and a great deal of information will be available. It seems to me that a bureau made up of men from the Association would be better able to put the

proper interpretation on the findings of this committee than would those in government and public health work alone. This bureau must have the best man power that can be obtained."

Now I will read from page 24 of the same document (reading):

"HOSPITAL AND HEALTH ASSOCIATIONS

"In reports previously submitted to the House of Delegates, the Council has referred to organizations controlled by groups of laymen, or by individuals, offering medical and hospital service to any who will buy 'membership' and pay a nominal sum each month as 'dues.' Such schemes have been put into operation in various places and have failed within a few weeks or months because of inadequate income or because of failure to render good service. The Judicial Council has regarded these schemes as being economically unsound, unethical and inimical to the public interest.

"Within the last year, some community hospitals have announced their intention to provide medical, surgical and hospital service to families on a flat rate basis. In at least one instance, such service has been offered to families for $35 a year, irrespective of the number of members in such families. In most instances, certain exceptions are made in that persons with chronic diseases are not entitled to receive the benefits of the plan and obstetric service is not supplied without additional compensation. The members of the Judicial Council doubt that it is wise to lead the people in any community to believe that all necessary medical and hospital service, even though chronic diseases and obstetric care be excepted, can be provided for the average family for $35 a year. In the cases presented to it the Judicial Council has advised against the adoption of such plans by community hospitals because it is believed that they are not economically sound in that they may be unfavorably affected by conditions entirely beyond control under which contracts cannot be fulfilled. There are other aspects of the matter that readily present themselves for consideration involving the interests of physicians in the community who cannot participate in such plans."

I ask to have marked Exhibit No. 6 the Proceedings of the House of Delegates of the American Medical Association, 1932, from which I offer, as against the American Medical Association alone, certain excerpts headed Bureau of Medical Economics, appearing on pages 15 to 18, and certain excerpts relating to the Mundt resolution appearing on page 40.

(Document entitled "Proceedings of the House of Delegates of the American Medical Association, 1932" was marked U. S. Exhibit No. 6 and received in evidence.)

Mr. Lewin:—I shall read from pages 15 and 16.

BUREAU OF MEDICAL ECONOMICS

Purpose, Functions and Method of Procedure

Immediately following the establishment of the Bureau in March, 1931, the director formulated an outline of the purpose, functions and methods of procedure of the Bureau and the phases of medical economics in which work should be initiated as soon as possible, to serve as a guide for both study and administration.

The Bureau of Medical Economics is established to study all phases of general economics that have a bearing on the practice of medicine. In every consideration of medical economics it must be remembered that: "A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession." Although business methods and economic principles are essential to an orderly conduct of the financial phase of the practice of medicine, all such methods and principles must serve rather than dominate the profession, must be secondary to the primary object of the profession, and must conform to the accepted principles of medical ethics.

The principles of medical economics, as they become established, should serve the profession as a sound guide in business and economics; they should never be perverted to defend even the borderline actions of the near charlatan.

The functions of the Bureau of Medical Economics are: (1) to collect, tabulate, study, criticize and prepare for publication and distribution data pertaining to the economics of the practice of medicine; (2) to furnish critical and constructive information and opinions by correspondence on the several phases of medical economics; (3) to encourage the adoption by individual physicians and medical societies of modern, sound, ethical business methods; (4) to urge medical schools to provide medical students with information concerning the economics of medical practice, and an outline of essential business principles which should be incorporated early in individual practice; (5) to develop, ultimately, a consultation service with respect to medical business methods.

The Bureau will endeavor to collect data on the following phases of economics:

Capital investment in medicine.
Care of the indigent sick.
Collection methods and agencies.
Contract practice.
Costs of medical education—students' expenditures—complete cost.
County and state dues.
Dispensaries and clinics.
Distribution of physicians.
Distribution of medical facilities.
Evaluation of patient's ability to pay.
General insurance for physicians.
General investments.
Group practice.
Health and accident insurance.
Industrial medicine.
Instruction in medical economics (college and extension courses).
Malpractice insurance.
Medical fees.
Office plans.
Office systems.
Panel systems (of foreign countries).
Physician's income.
Sickness financing.
Sickness insurance (compulsory and voluntary).
Sickness savings.
Sickness statistics.
State, county and municipal health department activities.
Thrift programs.
Workmen's compensation.

and such other phases of medical economics as may from time to time properly come within the scope of the Bureau's activities.

Opinions on specific, individual or local professional economic problems should be guarded or tentative until a general principle shall have been established to govern in the consideration of each special phase of medical economics. In all phases of the general subject in which the experience of large nonmedical groups has led to the adoption of definite economic policies, due consideration will be given such findings and policies when seeking to establish economic principles for guidance of the medical profession.

Every question pertaining to medical economics will be considered impartially and without personal bias. Courtesy and fairness, with nonmedical groups that touch some phase of medical economics, must mark every step of progress.

Policies and principles established after careful deliberation, supported by factual evidence and, wherever possible, by parallel procedures in the business, industrial or commercial fields will thenceforth govern in similar questions and situations.

When considering the economics of medical care, one must make a clear distinction between commercial and economic interests. Commercialism is characterized by: (1) unreasonable fees; (2) alleviation always predicated on cash in hand or no service; (3) unethical tendencies or practices; (4) destruction of scientific motive in both the individual and the profession at large; (5) transformation of the profession into a trade or business; (6) destruction of confidence in the profession; (7) an insidious tendency toward state medicine. Economics as applied to medical practice is predicated on sound ethical principles, constructive and reasonable: (1) Alleviation of suffering, prevention of disease, pursuance of research and the dissemination of dependable information are recognized as the primary obligations of the profession; (2) there should be a just compensation for service rendered; (3) modern ethical business methods are necessary to provide the highest type of service at the most reasonable cost; (4) ethical business methods insure confidence in the profession; (5) correct economic measures insure adequate amount and quality of service to indigent as well as pay patients; (6) the use of ethical business methods and correct economic measures serve to promote in the profession higher scientific attainments because of greater freedom from financial anxiety.

Detailed methods of providing the most economic medical service to both indigent and pay patients must differ according to local requirements, but the principles and policies governing the application of these methods must be universally applicable.

In many phases of medical economics, physicians must act as an organized group in order to accomplish the most worthy ends. Individual action along these lines will not be as effective or as free from error as collective organized action.

Whenever legislation limits or obstructs the most effective economic and high grade medical service, efforts must be made by organized medicine, after thorough study of the subject, to remove such limitations or obstructions.

New methods of providing medical care should be adopted only after a careful and thorough study of present medical facilities and the requirements for additional facilities. Duplication of effort and overhead expense is a principle diametrically opposed to correct economic methods.

By Mr. Lewin:

Q.—Now, Dr. Cabot, would it be fair to say that the great advances in the sciences that are involved in medical service are solely attributable to the American Medical Association?

Mr. Leahy:—Oh, I object, if your Honor please.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—To what body of men, if any body of men, can you attribute the great advances in the sciences that have brought about great advances in the medical practice that you have described, Doctor?

Mr. Leahy:—I object to that, if your Honor please.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Do you know whether or not there is any reason to believe that these group prepayment plans, such as you have described, are designed to destroy the American Medical Association?

Mr. Leahy:—I object to that, if your Honor please.

THE COURT:—Just a moment, Doctor. Objection sustained.

By Mr. Lewin:

Q.—Do you know whether or not, from your knowledge of these plans, they are designed to destroy private practice?

Mr. Leahy:—I object, if your Honor please.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Would you say that a doctor of medicine, Dr. Cabot, was the only person who could tell what the economic standards of practice must be in order for them to be in the public interest?

Mr. Leahy:—I object, if your Honor please.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Would you say that doctors of medicine are the only ones who can judge whether or not medical service is being properly distributed?

Mr. Leahy:—I object, if your Honor please.

THE COURT:—Where do you get that from, may I ask?

Mr. Lewin:—Yes. I got that from the issues presented here.

THE COURT:—You did not get it from the indictment, did you?

Mr. Lewin:—No, sir.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Would you regard it as perfectly proper for one of these group prepayment plans to seek consultations with other doctors outside of the group in serious cases?

A.—Oh, yes. It has been the practice of various groups. I should think it would be highly desirable.

Q.—Would you consider it perfectly proper for them to seek such consultations from members of the A. M. A., even though they might not be members of the particular group staff?

A.—Why, certainly, sir. If they were not members of the A. M. A. they would be very limited in their consultation.

Q.—Why do you say that, Doctor?

A.—Because a vast majority of the physicians of the country are members of the American Medical Association.

Q.—Do you know anything about the attitude of the American Medical Association toward the development of the Group prepayment plans that you have described?

A.—I know what I have seen in the publications of the American Medical Association, chiefly in THE JOURNAL, and what various of their officers have said. I should think, on the whole, they have been inclined—

Mr. Leahy:—I object to anything further. He has answered the question.

Mr. Lewin:—All right.

By Mr. Lewin:

Q.—You say you have observed that attitude. Have you observed any specific instances in which the American Medical Association has manifested an attitude toward group practice that you know of?

A.—I remember that a constituent society, the California society, interfered a good deal with the—

Mr. Leahy:—I object, if your Honor please. There is no evidence that the constituent society of California is the A. M. A., acting as such.

Mr. Lewin:—Oh, yes; we will connect that, your Honor. This witness has already testified that the American Medical Association has constituent societies in every state of the Union. That certainly includes California.

Mr. Leahy:—That is true.

Mr. Lewin:—One of the issues in this case under the indictment is going to be the long-continued opposition that the American Medical Association has exerted against every one of these prepayment plans throughout the United States.

THE COURT:—You are, as I understand it, speaking of the A. M. A. as the managing head. Then does the opposition come down through the constituent elements, or does it originate in the constituent elements? I do not know. Unless you can bring it to the American Medical Association proper, I doubt that it would be competent.

By Mr. Lewin:

Q.—Do you know whether or not the policies of the parent body, the A. M. A., with regard to matters such as these, influence the local societies which are its constituent members?

Mr. Leahy:—I object.

THE COURT:—Objection sustained—if that is an objection. Please make your objections formally so I will know that you are definitely objecting.

Mr. Leahy:—I said, I object, if your Honor please.

THE COURT:—Oh. Pardon me. I will sustain the objection. I only ask that counsel make their objections specific.

Mr. Leahy:—I shall try to do so, your Honor.

By Mr. Lewin:

Q.—You mentioned the state of California. Do you know of any instance in the state of California in which the parent body, the A. M. A., has indicated an attitude toward group practice on a prepayment basis?

A.—Yes.

Q.—I would like to ask you what that attitude was and have you tell the jury about it.

Mr. Leahy:—I object, if your Honor please. That is not the best evidence. If the A. M. A. has expressed an attitude it has done it in some way officially.

THE COURT:—It would not seem to be the best evidence, unless he was there and heard the discussion.

Mr. Lewin:—He says he knows about it. He is a member of the A. M. A. and he is an expert on medical economics and on group practice on the prepayment basis.

THE COURT:—The question is, how he knows.

By Mr. Lewin:

Q.—How do you know about it, Doctor—by study or observation?

A.—By communication with the group which was in disfavor.

Q.—You went out there and inspected the group, did you not?

A.—Not at that particular moment.

Q.—But you had—

A.—I have done so; yes.

Q.—And by reason of your contact with them you gained personal knowledge of the attitude of the A. M. A. toward it; is that correct?

Mr. Leahy:—If your Honor please, the doctor has just told us—

THE COURT:—Are you objecting?

Mr. Leahy:—Yes, your Honor.

THE COURT:—Objection sustained. There is another way of proving the opposition than the method you suggest. Obviously, from what the doctor said it would be hearsay.

By Mr. Lewin:

Q.—Have you knowledge of an incident in Texas?

A.—Yes.

Q.—With regard to the attitude of the A. M. A., the parent body, toward group practice there?

A.—Yes.

Q.—Will you state how you gained that knowledge?

A.—I gained that knowledge as the result of a decision of the Judicial Council made in a case coming from the state of Texas, from one of the constituent societies.

Q.—Will you tell us the name of that case?

A.—I think it is ordinarily known as the Dallas Street Railway case.

Q.—Can you tell us the name of any of the doctors involved in that group practice?

A.—I am afraid I cannot.

Mr. Leahy:—I object. There was nothing said about whether it was group practice or not.

Mr. Lewin:—Oh, yes. I asked him that question.

Mr. Leahy:—No, you did not.

By Mr. Lewin:

Q.—Do you know of any incident in which the attitude of the A. M. A. was manifested towards group practice in Arkansas?

A.—Not specifically, I think, sir.

Q.—In Florida?

A.—Yes, I think so. I think there was a case there, in Miami.

Q.—Have you knowledge of the attitude on the part of the A. M. A.?

A.—I have knowledge only through the documents in the case. I have no personal communication from any officer of the A. M. A. or from the local society.

Q.—What if any knowledge have you of manifestations of the A. M. A's attitude toward group practice in Milwaukee, Wisconsin?

A.—Nothing more than gossip, sir.

Q.—Have your own medical and surgical associates in Boston had any controversy with the A. M. A?

A.—No.

Q.—Or with the local society?

A.—With one of the district—

Mr. Leahy:—I object to that, because it is entirely immaterial, if it was a local society not connected with this case.

THE COURT:—Objection sustained.

Mr. Lewin:—All right, Mr. Leahy. You may cross examine.

Mr. Leahy:—Thank you.

CROSS EXAMINATION OF DR. HUGH CABOT

By Mr. Leahy:

(The cross examination repeated at first the early career of Dr. Cabot. He said the Massachusetts General Hospital was a closed hospital.)

Q.—Would you explain that to us?—because I think the jury would like to know what a closed hospital is.

A.—A closed hospital—the term was used for years, and I think it is still valid—is a hospital in which the staff is appointed presumably by the governing board, and they are the

only people who may practice in that hospital. In the days when I was concerned with it the patients there were all charity patients. There were no private patients in the Massachusetts General Hospital, and I don't think there could be legally at that time. A closed staff was the rule in those charity hospitals in that day.

. . . . . .

Q.—I am afraid that the question is liable to come up in the case as to dispensary service. Would you explain that to the jury also, so they will understand what that is as it is connected with the hospital?

A.—It is often referred to as outpatient service and sometimes referred to as ambulatory service. It means patients who can come to the hospital and see doctors on the staff and return to their homes, as opposed to patients who may come to the dispensary and are then sent in to the hospital because they are too sick or require study or for any reason too sick to go home. The outpatients at the dispensary are people who can come under their own power more or less.

Q.—While you were at the Massachusetts General there were no charges made for the services which were rendered to any of the patients; is that the fact?

A.—No, sir; no charges.

Q.—Was it a state institution or a municipal one?

A.—No. It is a very old chartered institution for which there was originally a grant from the state, as the result of which the governor has the appointment of three of the board of trustees out of a group of nine; but except for that grant, along about the Dark Ages, there was no other connection with the state. So the State did have, through the trustees, a minority representation on the board.

Q.—Do you know how it was supported financially?

A.—Oh, yes. By what is ordinarily known as charity, sir; contributions from individuals. It was at one time one of the rather "pet charities" of the city of Boston. It was quite a respectable thing to give money to the hospital.

Q.—Would you tell us, too, a little more in detail about the Mayo Clinic?

(*Dr. Cabot again went over many details of organization of the Mayo Clinic.*)

Q.—And those who came for treatment to the Mayo Clinic came from all over the United States, did they not?

A.—Quite.

Q.—There was no particular group of individuals which the Mayo Clinic served in any way, was there?

A.—Oh, no.

Q.—In other words, the only group notion about the Mayo Clinic is that it was a group of experts who had established themselves in Rochester, Minnesota?

A.—Yes, sir.

Q.—And to whom those who desired the services of that group of experts came for treatment?

A.—Yes.

Q.—Did the group own its own hospital, Doctor?

A.—No hospital, sir. They never had. For economic reasons they thought it would be better to let that be an entirely separate matter.

Q.—So the service which that clinic renders is medical and surgical service?

A.—Oh, no.

Q.—It collaborates with the hospitals; is that it?

A.—It has its own laboratories on a large scale, sir, that has nothing to do with the hospital.

Q.—But the clinic itself neither owns nor operates any hospitals?

A.—No.

Q.—It has its own equipment, of course, does it not, as you stated, its laboratories?

A.—Yes.

Q.—But there is nothing about the Mayo Clinic which you would designate as a consumer clinic?

A.—Oh, no, sir. That is just what it is not.

Q.—It is strictly, then, in my poor lay language, just a group of excellent physicians and surgeons who are located at Rochester, Minnesota, and who by their skill and by their reputation now have people coming from the United States and perhaps the world to them for treatment; is that true?

A.—I think so. I think it is definitely a group organized for certain purposes.

Q.—In other words, there is not any one who, on a definite, specific, stipulated sum of money, cannot go to the Mayo Clinic and demand service at any time?

A.—Oh, no, sir.

. . . . . .

Q.—The Mayo Clinic does do charity service also?

A.—Oh, yes, sir.

Q.—There is another thing that I wish you would explain in connection with some of these questions which are bound to come up in the case, Doctor, and it is just apropos of your answer. What is meant by service for indigents?

A.—It means, I take it, the medical care of people who cannot afford to pay; people who are not paupers, as I used to use the word. That has disappeared now, and they have substituted the word "indigent." But also a group of people who were not paupers, but who had no available funds to pay for medical care. The group has been enlarged, and I think that should be included in the word "indigent," under present conditions.

Q.—Those who reasonably cannot pay for medical care?

A.—Yes.

Q.—Those would probably be described as indigents?

A.—Yes. They tacked on the word "medical"—medical indigents—so as to complicate it a little more.

Q.—Instead of legal indigents?

A.—Yes.

Q.—So we find that the Mayo Clinic does do and did do while you were there what we would call charity work or the care of the indigent?

A.—Yes.

Q.—With reference to the patient who is able to pay, he pays for the service that is rendered to him as a patient by the clinic; is that true?

A.—Yes, sir.

Q.—And that is true of each patient who can pay?

A.—Yes.

Q.—I take it you knew both the Drs. Mayo very well, did you not?

A.—Yes.

Q.—And called them Charlie and Will?

A.—You were not allowed to call them anything else.

Q.—Were they members of the American Medical Association?

A.—Oh, yes.

Q.—Were they presidents of the American Medical Association at any time?

A.—Both of them.

Q.—Do you remember how long ago they were presidents?

A.—Dr. Will was president many years ago. I find it difficult to say, sir, but it was long before the day when I went to the clinic and, I think, before the time when I was at Michigan. I used to come down there, and I think that was after he had been president. Then some years later his younger brother, Dr. Charlie, became president.

Q.—Is there also a son who is still there?

A.—Yes, Charles. He is the son of Charles.

Q.—Do you know whether or not he is a member of the American Medical Association?

A.—Oh, sure fire.

PLAN OF BOSTON ORGANIZATION

Q.—You also are operating a clinic at this time in Boston, are you not?

A.—I don't call it a clinic, sir, in any ordinary sense of the word. I think of a clinic as a little different kind of organization.

Q.—I will give it the word you want me to call it.

A.—It is a method of offering medical service. I think of a clinic as having to have a building and laboratories and a lot of things of that kind. We have not got to that stage, and may not do so. But at the present time we have a considerable group of physicians who agree to care for a group of patients.

Q.—Do they also practice privately in their profession?

A.—Oh, yes. This would form a very small part of their work.

Q.—Would you describe to us just what your scheme is in Boston, Doctor?

A.—I have already described a part of it. I ought not to duplicate it. The arrangements are arrangements by which we as partners, a group of five of us, ask a group of younger men to work together and ask them to ask their friends, and finally state that we should be glad to take on as an associate physician any physician who is licensed to practice, who is a member of the Massachusetts Medical Society and thus of the American Medical Association, and having courtesy privileges at an approved hospital. The term "approved hospital" means approved by the Council on Hospitals of the American Medical Association. In that way we thought we could certainly secure for our patients a group of physicians not the worst in the state; and then we agreed to accept as consultants in any field anybody who held a certificate from these modern certifying boards which have grown up in the specialties with the approval of the American Medical Association, but not precisely under it. Then of course we also accept as consultants younger men who

could not yet become certified but who within our knowledge or the knowledge of our associates are capable to the extent of their age and size, so to speak.

Q.—Are you at the present time on the boards of any of the hospitals in Boston?

A.—No.

Q.—But you do, of course, enjoy all hospital privileges?

A.—I do not, because since I returned to Boston I have not had occasion to treat patients. If I did I could do it in the Massachusetts General Hospital or the Phillips or the Falkner. But I have not actually made any use of them because I have had no occasion to.

Q.—Do your associates, the doctors whom you have just mentioned to us, also have the privilege of the use of the hospitals?

A.—Yes, because we will not take anybody who has not access to a hospital, who cannot follow his patients to the hospital. We do not believe it is sound practice to have a patient separated from his physician just because the physician has no hospital privileges.

Q.—Are there any other organizations or clinics similar to the Mayo Clinic near Boston?

A.—Yes. The Lahey Clinic in Boston which was, I think, modeled after the Mayo Clinic. I think it is a relatively young organization.

Q.—Do you know whether Dr. Lahey is a member of the A. M. A.?

A.—I think he must be. He is President, and I assume so.

AMERICAN MEDICAL ASSOCIATION

Q.—Now, Doctor, when was it you first joined the A. M. A.?

A.—In June 1899.

Q.—You ought to know something about it, Doctor. You have followed the history of A. M. A. have you not?

A.—I tried pretty hard to, sir.

Q.—You know, of course, about THE JOURNAL, something of which was just read a short time ago to the jury?

A.—Yes. I spend a great many hours reading THE JOURNAL.

Q.—What do you think of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION as a medical journal?

A.—Oh, it is undoubtedly today the most important medical journal in the world, sir.

. . . . . .

THE JUDICIAL COUNCIL

Q.—A question was asked you with reference to the constitution of the American Medical Association, and that was with reference to its council, the Judicial Council, and I think you stated that so far as you knew the jurisdiction of the particular council was limited in a sense, as we call it, to sort of an appellate jurisdiction?

A.—Yes.

Q.—It does not originate anything?

A.—I do not think so, although I would not be dogmatic about it.

Q.—Let us assume that a doctor in one of the local county associations were charged and his local county association had expelled him. Do you know whether or not that member of the county association would have an appeal or the protection of an appeal in any way?

A.—I think he would have to go to the state society and then take an appeal to the Judicial Council.

Q.—And that is where the jurisdiction of the Judicial Council comes in?

A.—That is my understanding of it.

Q.—In other words, the member who is charged, before he is expelled, has the protection, first, of his own association, then of the constituent state association and then one further step up to the Judicial Council of the American Medical Association?

A.—Yes.

Q.—In other words, the American Medical Association itself does not originate charges against anybody?

A.—I don't think so, sir.

STATUS OF COUNTY MEDICAL SOCIETY

Q.—Am I right, too, Doctor, from your experience, in saying that the county association is an independent association which governs itself, elects its own officers, has its own constitution and by-laws, of course subject to the medical ethics prescribed by the American Medical Association?

A.—It is subject to its own state control. I take it, first, it is a subdivision of the state society.

Q.—With reference to its own internal affairs, its own local affairs in the county association, it elects whom it wishes to membership, does it not?

A.—Yes; I think so.

Q.—There is no control superimposed by the state association upon the county association with reference to the constitution of its membership, is there?

A.—Yes; I think there is, sir. I think the state association lays down certain rules as to who may be admitted to membership in the county society.

Q.—But within those rules the county association admits as it sees fit?

A.—Yes.

Q.—And then it elects its own officers, does it not?

A.—Yes.

Q.—And it has its own constitution and by-laws?

A.—I would not be too sure. I never saw the constitution and by-laws of the County Society. I guess they have one.

GROUP PRACTICE

Q.—Just a few questions, Doctor, about what was asked you with reference to group practice. How many, in your own experience, would you say there were of these groups—and let us call them consumers—which had been organized, we will say, during the last ten years in the United States? Have you statistics on that at your fingertips?

A.—No; but very few consumer groups, as you and I, I think, are using the term, who were associated in an important way before that time. This is rather a recent development in the group field.

Q.—That is, consumer groups?

A.—Yes.

Q.—And in order that we might not be at variance as to what we are talking about, a consumer group is a group of individuals who buy medical service or are patients or potential patients?

A.—Yes.

By Mr. Leahy:

Q.—Have you any knowledge from your studies as to whether that sort of consumer group practice had been tried abroad in Europe before that time?

A.—I think the principle had been tried though the setup was a little different. A great many years ago, particularly in the low countries, in Denmark and the Netherlands, cooperative groups arranged for medical services, but the thing is all pretty shadowy, pretty old, and largely disappeared. There were some arrangements more recent than that directly under organized cooperatives, but I think they are relatively few and I cannot say I understand much about them. I don't think they are an important economic development.

Q.—And I think you said they were relatively few in the United States also?

A.—I don't think there are many.

GROUP HEALTH ASSOCIATION, INC.

Q.—Do you recall when it was you first saw group health in Washington?

A.—Now, I don't want to be dogmatic about that. I could say roughly.

Q.—Just your best recollection.

A.—Probably in the autumn of '37; it might have been in the early part of '38.

Q.—Do you recall when it was that you first knew about group health in Washington in any way from any source?

A.—You mean this specific organization?

Q.—Yes, this specific organization.

A.—Well, it was certainly during the year '37, not before that.

Q.—Do you recall about how long it was before you came down here that you learned there was such a group?

A.—Probably two or three months.

Q.—And did you learn about it through someone writing to you?

A.—I daresay I heard about it from Dr. Richard Cabot, who had, I think, been down here. I never saw him here. He wrote me about it and thought I would be interested, and would probably want to know about it. I daresay that was the first I heard of it.

Q.—Did you come down here to see the group at the request of someone or at your own choice?

A.—I came at the request of some member of the organization here, the lay organization.

Q.—Do you recall who it was who asked you to come?

A.—At a guess, it was either Kirkpatrick, if that is the right name, or Penniman. I had some correspondence with both those gentlemen. I would not be dogmatic; I am not sure I have the right name now.

Q.—Did you meet whichever one of these gentlemen it was, whether Kirkpatrick or Penniman or who, when you came to Washington?

A.—Yes.

Q.—Do you recall how long you were at the clinic?

A.—Oh, I should say perhaps three or four hours.

Q.—Did you go back the same day you came down?

A.—No, I stayed overnight. I first talked to some of these laymen and then went to the clinic, and then, if I remember correctly we met for dinner and there carried on a discussion, and also later in the evening.

Q.—Did you go very thoroughly into the organization of the group?

A.—I wonder whether you mean of the medical or the business organization?

Q.—Did you go into the business organization at all?

A.—Only so far as to note what their scale of charges was and to come to the opinion that with a reasonably large group of subscribers the amount of money they would have would be sufficient to enable them to carry on.

Q.—Do you recall now as to whether you had any information as to how many subscribers they had at that time?

A.—I remember being impressed by the fact that at that time the number was not large enough to make certain that if it would not grow that it could carry on and render the kind of service intended.

Q.—Did you have any number fixed in your own mind, Doctor, of subscribers which would be the minimum in order for the success of the venture?

A.—I had it fixed in my mind; I came to the conclusion that without something in the neighborhood of a thousand members the fixed income would be insufficient with which to do the job.

Q.—Do you recall what each subscriber was to pay when you were talking to them?

A.—It would be difficult for me to say because I didn't make any mental note of it. It would, however, be right in my mind that they were to pay $2 a throw, but I wouldn't put very much money on it.

Q.—You mean by that $2 per month?

A.—Yes.

Q.—You think about $25 a year per person?

A.—That is the way it lies in my mind; after that it was raised, I think.

Q.—As a result of the inspection which you made at the clinic you thought that about $25,000 would operate it as it was then equipped?

A.—I didn't put it that way; I didn't figure that out that way.

Q.—Does it work out that way?

A.—Yes.

Q.—You said the irreducible minimum as to the number of subscribers would be one thousand, and the cost of the operation $25,000 per annum?

A.—Well, I was aware that those things don't start in a vacuum, and you must build them up; and it seems to me, or it seemed to me that they must have a thousand members to enable them to cary on according to the program and not leave them worried as to whether or not they were going to get by.

Q.—Did you at that time go over the equipment; inspect it?

A.—Yes, that would be a fair statement. I went around from one department to another and, comparing it with similar equipment elsewhere, thought it sufficient.

Q.—You were told how the equipment was purchased, were you not?

A.—No, if I was I have forgotten about it; I wasn't concerned.

Q.—Were you told as to where the funds came from to purchase the equipment?

A.—No.

Q.—You were just shown the clinic; you inspected it, and you were told they had a thousand members?

A.—I don't remember that they said they had a thousand members; and I don't think that I said that I did.

Q.—But you concluded they would have to have that number in order to function properly there according to the program which you understood they had?

A.—Just a minute; I think you are putting something in my mouth. As I understand the subscriber, he is the head of the family who then brings in various dependents. Now it is very commonly true that a subscriber pays a fixed sum; then a dependent, usually a wife, pays a somewhat lesser sum; then other dependents who are under 18 pay a lesser sum, and young children a still lesser sum. So I don't understand that it was to be expected that there would be $25 from every patient; I was talking about subscribers; not patients.

Q.—In other words, the subscribers, or the patients, might exceed the actual number of subscribers?

A.—Yes, as I use the word, that is right. The number of individuals who have care often exceed the number of people called subscribers and to whom the group looks for its moneys.

Q.—Do you recall now whether you went over the plan thoroughly enough to ascertain what a dependent of a subscriber paid at that time?

A.—I think I was told; I don't remember, but I am satisfied it was a lesser sum than the subscriber. I was chiefly interested in ascertaining whether or not a good job could be done there. I am not regarded, myself, as a financier, and do not pretend to know much about the business end of it.

Q.—Did you go into the financial side at all?

A.—Not in more than very general terms.

Q.—Did you meet the doctors?

A.—Yes, I think I probably met all of them; I wouldn't like to say.

Q.—Who was the surgeon at that time?

A.—A gentleman by the name of either Sellers or Selders.

Q.—Did you ever meet him before?

A.—No, sir.

Q.—Did you have any further study made of the Group Health Association here in Washington than that one visit?

A.—Beyond correspondence, et cetera, publications, no. That is the first time I ever went there and looked over the organization, physical plant.

Q.—I take it you had nothing to do with the original formulation of the plant?

A.—Nothing.

Q.—It was a going concern when you first heard about it?

A.—I think it was not quite clear which way it was going; there were some features that were dropped.

Q.—Well, it was operating?

A.—Yes, the wheels were turning.

Q.—When you saw it?

A.—Yes.

Q.—Have you ever been in the clinic since that time?

A.—No.

QUALIFICATIONS FOR HOSPITAL STAFF

Q.—I think you stated something to us today on direct examination, and inasmuch as we are on the subject of hospitals, you stated it to be your opinion, Doctor, as I recall it, that in your judgment any person whom the state licensed, and whom the state declared was capable of practicing medicine, ought to have the privilege of practicing medicine?

A.—Yes, I have felt very strongly about that for a great many years. That is my opinion. I have constantly said so. It has troubled me considerably.

Q.—Do you know of any state, city or hospital where that thought of yours is put into effect?

A.—No, that's it. That's one of the things that trouble me.

Q.—In other words all hospitals do through their local board of trustees make an investigation of those who are admitted to either the regular or courtesy staff?

A.—In the hospitals with which I am most familiar the operation is carried out through the staff. The governing board says, "Now, you look into the qualifications of these people, and if in your opinion they are qualified, submit their names." I think the governing board never undertakes to have any opinion of their own. They depend on the opinion of their staff.

Q.—Now, under your opinion, Doctor, which you state, in your judgment, there is at least a prima facie right in a doctor who has been licensed to practice medicine until he is found to be wanting in some way: as I understand it, that is your idea?

A.—Yes.

Q.—But even under your thought, if you knew something about a doctor which you thought should disqualify him from service in the hospital, or from the right to serve his patients in the hospital, you still wouldn't think he would have the right to courtesy privileges, would you?

A.—That is a little abstract. The question was whether I knew something which would disqualify him. That would depend on what it might be. As to the younger men I might think that by bringing them in and putting them in the staff and letting them develop, that that reason might disappear. I am a great believer in taking them on, putting them on the staff and, particularly, if they are young. Youth, to be young, that is not a fatal disease. Now, men older than that you would have to know something about their capacity.

Q.—Would you think, for instance, that a doctor who had just graduated from—what do you call it? Resident Service?

V 19

Yes, just graduated from residency, and been licensed to practice should have the right to practice general surgery of all kinds in a hospital?

A.—Well, it depends on the nature of his residence, but on general principles I should want to have him come in and observe him, and see him function under the supervision of the staff and then give him an opportunity, if he demonstrated the capacity, to be put on the staff.

Q.—Would you think the hospital should give that young man or that person the right to perform any and all kinds of operations?

A.—I should be skeptical about that.

Q.—Wouldn't you want to make some inquiry to determine his fitness?

A.—I should be in favor of giving him a chance to show what ability he possessed, as I have explained to you.

Q.—Well, wouldn't you want to know more about the man? Wouldn't you want to make some investigation; or would you think that it was proper for him to go into the hospital and perform any sort of an operation?

A.—I would be skeptical about that, but I would like to see him in action. Talking about these fellows with others doesn't get you very far.

Q.—Would you let him go in action first, and then determine his qualifications later?

A.—I would let him go into action under wraps.

Q.—What is that, Doctor?

A.—I said I would let him go into action under wraps.

Q.—What do you mean by that?

A.—I would like him to do operations of lesser and moderate severity at first; certain minor operations, standard operations of moderate severity. I should like to know how he actually behaved, before I actually turned him loose.

Q.—In other words, you wouldn't want to give him the privileges of practicing on mankind in order to determine whether or not he was qualified to do so?

A.—No, unless he was a trained man of which I had plenty of knowledge. But there are people who by reason of their residence training are entirely qualified by that training alone.

Q.—Let us assume he was a resident for one year and then had come out with a license to practice. Would you think his license to practice, with an experience of residency of one year would entitle him to the privileges of general surgery in the hospital, or would you put him under wraps?

A.—Put him under limitation.

Q.—Now, you wouldn't think even under your own opinion that the mere license a doctor might possess to practice his profession would entitle him to hospital privileges if there was a grave suspicion as to the legality of his practice, would you?

A.—Oh, no.

Q.—For instance, if you knew there was a question, a serious question raised as to the legality of the practice of a given physician, and you found that the hospital staff had requested that his application be held up until that question had been determined, would you think that was a reasonable act on the part of the hospital?

A.—That sounds reasonable. I don't know what the word "legality" means, as you use it.

Q.—Suppose we are specific: Suppose or assume that the association with which this doctor is connected has been notified by the Federal District Attorney for the District of Massachusetts that they must desist the practice in which they are then engaged, and you know this young man has made an application to your general hospital for hospital privileges, if you were advising the hospital, as a member of its staff and so advised it that they ought to withhold the privileges from this young man pending the determination of the question, would you consider that good advice?

A.—That would sound like good reasonable advice.

Q.—Just what you would do?

A.—Yes.

Q.—Now with reference to one other phrase, and then we will be about through. We have had here asked about "adequate medical care," and "complete medical care." Frankly, I don't know what they mean. Will you tell us?

A.—I won't bite.

Q.—Frankly, I don't know the meaning of those terms. Will you tell us what they mean?

A.—I will not, I don't know what it means. I don't use the words, adequate medical care, complete medical care.

Q.—Well, won't you give us your idea of what they mean?

A.—No, I won't; I don't know.

Q.—You don't know; and I don't know either. I don't think anybody knows.

A.—I will tell you what "complete medical care" is.

Q.—Well, what is complete medical care?

A.—Complete medical care would mean that the care offered by this organization covered the whole field of preventative medicine, diagnosis and treatment in all fields. It is very all-inclusive. It means that there is no condition from which the patient complains that you will not treat him for.

Q.—In other words you think the staff numerically should be large enough so that there will be a man, some member of the staff, competent to handle any and all cases in every field?

A.—If the association says they offer complete care, yes. Now, I know of several organizations that started in on a small scale, who were perfectly frank to say there were certain fields they would not undertake to explore. They made that very clear; they were frank about it and there was no difficulty.

Q.—But exclude those fields?

A.—Excluding those fields, they should.

Q.—Now, in your opinoin, would the care be complete medical care if the quality given was not good medical care?

A.—I suppose when I say "complete" I refer to quantity; the question of quality would be another matter.

Q.—You would think there was complete medical care if it wasn't of good quality?

A.—I might regard it as complete. I think the question of quality would have to be separated from the question of quantity.

Q.—In any organization which offers to anybody or everybody complete medical care, if in that care they render the care is not good care, the quality is not good: would you think the organization was operating in the public interest?

A.—It would depend on who said it was not good care.

Q.—I will make it in your opinion. If in your opinion the care was not good, what would you say?

A.—If I didn't think it was good care, I should say "No."

Q.—And do you think that there would be or could be any one else who could determine that question other than a physician?

A.—I would not pick a fool like me: I would pick a much better group of people than that.

Q.—Well, you would pick a good medical man, wouldn't you?

A.—I think I should want a group of physicians, with varying capacities. I, for instance, would be a very poor witness on the capacity or capabilities of an ophthalmologist for instance or of a specialist in certain other fields. I should doubt whether there would be any one physician who could judge the capacity of the group; and I think it is a job for more than one physician; a committee of them.

Q.—In any event it would necessarily be a group of medical men?

A.—Yes.

Q.—Did you have an opportunity while you were here at all to observe the quality of the practice of Group Health Association?

A.—Well, I saw two, if I remember, of the physicians actually examining and treating patients.

Q.—What were they examining for?

A.—One was a pediatrician, and he was looking over children, and he seemed to me to be doing a thorough job of it. Now, I am not an expert pediatrician, but after seeing for a good many years what has been going on I think I would be able to say whether or not he was doing his job in a slipshod, slapdash sort of way, and on the whole he seemed to me to be doing a pretty good job.

Q.—Who else?

A.—I saw a younger member of the staff doing an operation on a septic finger. Now that is down my alley. He was doing that job all right.

Q.—Is that all you observed?

A.—That is all.

Q.—What examination was the doctor making of the child?

A.—A pretty good, thorough examination. I played around with him for quite a while, watching him with the child.

Q.—Was it just a physical examination?

A.—Just a physical examination.

Q.—Was the child sick?

A.—Well, there were several children in the course of the time I was there.

Q.—Did you see them all examined?

A.—I should say three or four; I saw him examining.

Q.—Do you recall what the people were suffering from?

A.—Not in the least.

Q.—Do you recall how many patients were there while you were there?

A.—Well, I observed that there was no overcrowding there. The patients seemed to come along in reasonable sequence. That is one thing which always impressed me, and of which I have always taken notice. I thought at that moment the organization was taking care of the patients at a reasonable rate.

Q.—But you haven't any recollection as to how many patients you saw there?

A.—With that physician?

Q.—Yes.

A.—Three or four.

Q.—With any other physician?

A.—There was no crowding in the waiting room, I can say that. I will tell you I am a little sensitive about that. Up where I have lived I have had some experience with that, and it has left me a little sensitive on that score. In Boston I have seen overcrowding and there did not appear to be any here.

Q.—By the way, would you tell us how the doctors are taken on the staff at the Mayo Clinic?

A.—It would be difficult to say. Most of the appointments made during the days that I knew very much about it seemed to come from Dr. Will. Just what extent he discussed the details with the other people I couldn't say; I assume he did, however.

Q.—Did they come by invitation?

A.—The men who were brought from outside all did. Then there were additions to the staff from the younger men on fellowships. They carried them on a yearly basis and finally they were appointed. That was going on all the time.

Q.—Doctor, you made one answer this morning: I want to ask you this. You said you thought you rendered better service, or maybe that a man could render better service, where he was engaged with a group than he could individually; that you did a better quality of work?

A.—I am pretty sure I did.

Q.—Why do you think you work better with a group than by yourself?

A.—I can compare it, of course, with the conditions under which I worked in Boston and Michigan, which was frankly group work, while at our office there and at Rochester. In the first place there was no waste motion; no loss of time, going from one patient to another, from hospital to hospital; a tremendous amount of wasted motion in the earlier days. Then I was constantly unable to get prompt opinion or advice when I wanted it. In the group there was very close articulation between yourself and the other physicians and specialists. And then quite clearly—and maybe it is an individual peculiarity with me—I was free from the feeling that I had to pay any attention to the financial or economic status of the patient. I had no worry at all whether this patient, if I told him something he didn't like, whether he would go to somebody else and not pay his bill. Working in a group that is entirely removed, and I feel very clearly and so felt that I could give a very straightforward opinion. It is on sounder ground in treating and in viewing the patient in whom I had no financial or economic interest. They were just sick people to me to whom I gave my opinion. I did the best I could and if they didn't like it they could throw me out of the clinic, but I could be honest.

Q.—That is what you meant by your answer this morning, in that respect?

A.—Yes.

Q.—Doctor, you believe that no matter what the group is, whether producer group or consumer group, that whatever staff they have should be competent?

A.—Sure fire.

Q.—In other words, if there is not a competent staff there to render the services they claim or offer, that group would not be operating in the interest of the public or the group; is that true?

A.—Yes.

Q.—Have you any notion now about what you would consider to be a proper staff in a group?

A.—No, because it depends on local conditions. How large is the group of subscribers; at what distances do they live away from the clinic and away from each other. They must all have home visits. If I was dealing with a situation such as Ross-Loos where I might have to cross the city—it is only a hundred miles, from one end to the other of the City of Los Angeles is only a hundred miles—it might take me some time; and if I was working in a relatively compact space with no problem of distances I could get along with a much smaller staff. I don't want to put the size of the staff entirely on the basis of the number of patients.

Q.—In your studies and from your experience now, have you in your own mind any plan which could be a standard consumer plan, under your notion of complete medical care and good medical care; how such a plan could be set up?

A.—I should think it would be possible to have a standard. A committee from the eastern part of the country spent a good deal of time in trying to draw up principles from which a guide could be made on that subject. Michael Davis was chairman of that committee, and we spent a good deal of time associated with groups and we drew up what you might call a draft of the salient features of the plan, and I think, of course, it was very well done.

Q.—Would you mind telling us who were on the committee?

A.—I am not sure of all of them. The committee was called first by Michael Davis, Kingsley Robert; Clifford Loos and Dr. Allan Butler of Boston; and then there was a gentleman from Little Rock, Trinity Hospital, whose name I can't remember.

Q.—Was that Dr. Shadid?

Mr. Lewis:—Ogden.

The Witness:—He had been with that hospital group for many years. There may have been one or two others but I doubt whether we ever had more than that number at any one meeting.

Q.—I notice the committee you named is a committee of doctors?

A.—Michael Davis is a doctor of philosophy.

Q.—He called the group together, but the group was a committee of doctors?

A.—Yes.

Q.—Do you think a committee of laymen would be able to formulate a plan for the distribution of medical care without consultation with doctors?

A.—Oh, no.

Q.—Is that plan that you adopted—has that been put into effect?

A.—That was not adopted; these were just recommendations.

Q.—Just recommendations?

A.—Yes; that is all. It was only a general method by which you might study the capacity of an organization.

Q.—Doctor, while you were here in Washington on that trip for Group Health, did you examine any of the clinics which were evidently similar to this you discussed this morning, here in Washington?

A.—No, sir.

Q.—Did you know or did you hear of our Harry N. Lewis Clinic?

A.—No.

Q.—Our American Compensation Accident Clinic?

A.—No.

Q.—Northeast Insurance Clinic?

A.—No.

Q.—Union Market Workmen's Compensation Clinic?

A.—No.

Q.—Washington Industrial Accident Clinic?

A.—No.

Q.—Washington Building Workmen's Clinic?

A.—No.

Q.—The First Aid Station?

A.—No.

Q.—None of those were brought to your attention while you were in Washington before?

A.—No.

Q.—Of course the industrial clinics which come to your mind have been in operation for a number of years, haven't they?

A.—Yes.

Q.—Doctor, you said your committee had made certain recommendations. Would you just glance at this (handing document to the witness) and see if this is a statement of the recommendations your committee made?

A.—No, sir.

Q.—Those are not?

A.—No.

Q.—Are you familiar with this?

A.—I could not say I am. I know this case from a different source than anything I have ever been associated with.

Q.—You haven't been associated with Group Life Federation of America, Incorporated?

A.—No.

MONDAY, FEBRUARY 10

DR. HUGH CABOT (CONTINUED)

(Dr. Cabot described improvement in hospital service.)

A.—I think perhaps the most striking thing is the improvement in the type of people who are in the position of trustee. In my earlier days it was likely to be a resting place for highly respectable, but quite dead, people, who spent their time doing other things. I have been very much struck by the improvement in the type of trustee and his ability to grasp the general situation. Then, of course, there has been an enormous improvement in the buildings. Even in my short time a great many of the hospitals were pretty shabby and shoddy places, where I didn't blame people very much if they took one look at them and then ran. Improved buildings have made them look like

places where you would be likely to get good care. And, finally, the improvement of the staff and the staff organization has been very striking.

Q.—Would you explain to us, while you are on that point, just a little bit as to what the board of trustees does in the ordinary hospital?

A.—In the ordinary hospital they are people who, in the first instance, must decide all of the problems, which include the financial, the economic and the general social problems in which hospitals are involved. They are charged with the business of the selection and the appointment of hospital administrators—hospital superintendents, as they were more commonly called in the past—and then finally, with the appointment of the staff. They are the people through whose hands all of the appointments must go. They must in some way obtain satisfactory information as to qualifications of the people that they appoint.

Q.—I think you stated you noticed that in that particular itself you have seen a better class or at least a more interested class of trustees?

A.—Yes, sir.

Q.—They seem to have recognized their responsibility and to have assumed it?

A.—Yes, sir.

Q.—To a higher degree than they did back in your early days of practice?

A.—Yes, sir.

Q.—Because, after all, it is a responsible thing, is it not, to operate a hospital under proper standards of care?

A.—I regard it as one of the most important responsibilities that the ordinary layman can be asked to take on.

Q.—And there is hardly any branch of hospital care that is not a subject of great importance, so far as the maintenance of proper standards in the hospital is concerned?

A.—No.

Q.—For instance, the equipment is essential, is it not?

A.—Yes, sir.

Q.—And it ought to be of the very best they can purchase?

A.—Yes, sir.

Q.—A board should be careful in the selection of its staff to get the best men possible for its staff?

A.—Yes, sir.

Mr. Lewin:—Are you speaking of its courtesy staff or its regular staff?

By Mr. Leahy:

Q.—Would you explain for the jury, apropos of that question or comment, what is the distinction between the duties or the rights or privileges of the regular staff in a hospital as opposed to the courtesy staff?

A.—Referring to hospitals which have the dual function of the care of the indigent and the care of patients who can pay, the ordinary distinction is that what is known as the permanent staff are people who are responsible for the care of patients who contribute little or nothing to the cost of their care. Of course these people may have private patients in the hospital, unless it is one of the common hospitals where there are no private patients. Those people are responsible for the care of the indigent and semi-indigent.

The courtesy staff are physicians of good repute who may use the hospital and all of its paraphernalia for the purpose of treating their paying patients, and they are generally regarded as part of the hospital staff, but not involved in the making of decisions which the permanent staff ordinarily makes or the policy which they refer to the administration.

Q.—In other words, Doctor, it is true, is it not, of the permanent or general staff of the hospital, that any particular doctor upon that particular staff may be called upon at any time by the hospital to take care of any indigent patient who may be entered therein?

A.—Yes, sir.

Q.—And if you were, for instance, as you have been, upon the permanent or regular staff of hospitals, called at any particular time of the day or night, if the hospital needed you for some patient who was suffering from a cause which required your specialty for treatment, you would go, would you not?

A.—Yes.

Q.—And there would not be any question of the pay, so far as you were concerned, from your poor patient?

A.—No, sir.

Q.—In other words, the care of the indigent in the general hospital which has means for such care lies with the general or permanent staff?

A.—Yes, sir.

Q.—But the courtesy staff consists of those doctors who have been given the privilege of entering the hospital to take care of their own private patients?

A.—Yes, sir.

Q.—For instance, the hospital would not call upon a member of the courtesy staff to attend such a person as I have just described, who was brought into the hospital, an indigent who needed treatment?

A.—No, sir.

Q.—That would go to the permanent staff?

A.—Yes, sir.

Q.—Are there some hospitals, Doctor, which are known as hospitals for intern training or resident training?

A.—Yes, sir.

Q.—Would you explain those to the jury, too, so that they will understand it?

A.—In general terms a hospital cannot satisfactorily train interns unless it is of considerable size. A small hospital which may be entirely sufficient for the care of a relatively small community, a hospital of 25 or 50 beds, is not a satisfactory place to give the early post-graduate training to those physicians who have finished their medical course but still have a good deal to learn through direct contact with patients. Those hospitals must be of reasonable size and give a reasonable variety of opportunity. For instance, a hospital, though it may be large, which has only one type of patient, that is to say, patients with mental diseases, would not be a satisfactory place for the training of interns except for specialists in mental diseases. It must be in truth and in fact a general hospital where they will get a fair cross-section of the various conditions which they will be called upon to treat. I am not clear just what standards of size have been determined and, in fact, you could not settle it on terms of size. One hospital with a hundred beds might be an unsatisfactory place for the training for interns if it was importantly concerned with one or two types of disease, whereas another hospital of the same size might be an entirely satisfactory place.

Q.—Is it true, Doctor, of the student of medicine as of the student of law that in the medical school he is grounded in the basic sciences of his own profession, but he does not get practical experience while he is still in the medical school?

A.—That is not today the truth, sir. It was true when I was a medical student, though not entirely. At the present time, in broad terms, the first two years of a medical course are largely in the fundamental sciences, and a good deal of work in the laboratories. But beginning in the third year and sometimes in the latter part of the second year they go to the hospital, see patients with the staff and with the instructors, and today, commonly during their fourth year, they play a moderate part in the care of patients. They are appointed as what is often known as clinical clerks, and they see the patients and take the history and make certain examinations, under supervision, of course, and they get a good deal of contact with patients during their third and fourth years. While they require more experience, they are relatively fairly well equipped, much better equipped than they were forty years ago to treat patients.

Q.—Do you recall, Doctor, how many medical schools there were in the United States, say twenty-five years ago?

A.—Well, roughly and generally speaking, a hundred and twenty to a hundred and thirty.

Q.—Do you know how many there are today?

A.—Seventy-two or seventy-three.

Q.—Do you recall now the reason why these others have dropped by the wayside, so that there has been a reduction from one hundred and twenty down to seventy-two or seventy-three?

A.—Oh, yes; I recall that very well. I was involved in the job there. It was based on a report made to the Carnegie Foundation by Mr. Abram Flexner in which he reviewed in a masterly fashion the existing schools in the United States. He pointed out that there were a great many schools which gave a pretty poor article of education and that probably should not properly be called medical schools at all; they were proprietary schools in which a small group of physicians undertook to form a faculty, the chief purpose of which was to obtain consultants for those same gentlemen from their students; and they were not to be compared with a group of medical schools many of which were associated with universities in which the instruction was relatively very much better.

The issuance of that report had a very profound effect and influence on two bodies: the American Association of Medical

Colleges and the American Medical Association, acting independently, but together, to bring pressure which resulted in the disappearance of some schools in the consolidation of a great many schools. In some states as many as two or three existing medical schools were consolidated generally under the general purview of the university, and the disappearance of schools between about 1911 or 1912 and 1924 or 1925 was relatively rapid.

Q.—Those seventy-two schools which are still training young doctors are all pretty much what they call Class A schools today, are they?

A.—Yes. They are classified as class A, but it would be a mistake to regard them as of equal value.

Q.—Do you have also a similar classification of hospitals with reference to their standards?

A.—There are two general classifications of hospitals: one started a good many years ago. I remember the early studies made about 1920 or 1921 under the auspices of the American College of Surgeons which had chiefly for its purpose to see that the hospitals were properly equipped, that they had proper laboratories, that they had reasonable staff organizations and that the opportunities for interns and for the students were such that they could get a sound view of the then practice of medicine. Then at a later date, which I could not accurately establish, the American Medical Association went into the question of the qualifications of these hospitals for intern training. Those two studies are a little differently weighted. The American College of Surgeons was concerned with physical equipment and standards of administration. They were not specifically concerned with the opportunities to train interns to the extent that the American Medical Association has been.

Q.—Do you recall over how many years the A. M. A. has been interested in seeing to it that proper standards have been maintained for the training of interns in hospitals?

A.—I should find it difficult to establish it more accurately than at least fifteen years.

Q.—Is that same period of time also the answer to the question as to the interest of the American Medical Association in the educational facilities which various medical schools render to the students?

A.—I don't think so, sir. I should say that the interest of the American Medical Association in medical education went very much farther back. This inspection and classification of hospitals was an outgrowth of their interest in the problem of medical education.

Q.—In your judgment, that interest is a beneficial one for the public, is it not? Is it in the public interest to see to it that the hospitals are kept to high standards of qualifications and that they are also required to maintain a proper curriculum and proper facilities for the education of the young doctor?

A.—There are two questions there. I will try to answer them separately.

Q.—Answer in your own way, Doctor.

A.—It is certainly in the public interest that a group of experts, such as the American Medical Association, should be interested in the conduct of hospitals. There can be no argument about that.

In regard to the curriculum, they are probably interested, but I believe it to be strictly the business of the university—and practically all of the medical schools of the country now are parts of universities—I think it is the business of the university to maintain their own standards, get all the advice and help they can from experts, but I still believe the public responsibility for the conduct of medical schools remains with the university and cannot be transferred to any other body.

Q.—But you think it is in the public interest for the A. M. A. to do the best it can to see that those standards established by those schools are high and in the public interest?

A.—Yes; in general terms they are no doubt in the public interest.

RE-DIRECT EXAMINATION

By Mr. Lewin:

Q.—You just testified, Doctor, that in your opinion you regard it in the public interest and beneficial to the public interest for the A. M. A. to take an interest in hospitals, to see that they live up to certain standards. Will you tell the jury what type of standards, in your opinion, the A. M. A. should be interested in, in order to be in the public interest?

A.—I should say the standards were those standards which pertain to the study and care of patients. In that field they are the undoubted experts. In other fields they might not be experts; but whether a given hospital is equipped and does, in fact, give good care to patients, is very much the business of a large and well developed medical organization.

Q.—How, in your opinion, should the American Medical Association manifest that interest in order to be in the public interest? Should it seek to control the hospitals or should it simply advise them?

A.—It does not occur to me that a professional association can control a hospital, as I use the word. The control must remain with the lay board. The lay board will naturally give great weight to the opinion of a professional association on professional questions; but there could, I take it, be no question of control. Control must remain with the governing body.

Q.—Would you regard the approval by the A. M. A. of a hospital for intern and resident training as a valuable and important thing to a hospital in these days?

A.—Oh, it is very important.

Q.—Why is that, Doctor?

A.—Because it establishes with the public, practically, through the governing body, the fact that this hospital is an organization that has an equipment and staff which will authorize you to assume that it will give good care. Such approval is undoubtedly of first class importance.

Q.—Then you would think the A. M. A. should be very careful with reference to giving or withholding approval of hospitals, would you not?

A.—Oh, I assume that any scientific body would of course reach an opinion with great care. It is the essence of science to be careful in the conclusions drawn from premises.

Q.—Has the courtesy staff of a hospital normally anything to do with the training of interns?

A.—I should say not. There may be hospitals in which the courtesy staff plays some part in training interns, but I do not happen to have known of one.

Q.—Would it, in your opinion, be in the public interest for the A. M. A. to insist as a condition of giving its approval to a hospital that that hospital confine itself, its regular and attending staffs, and its courtesy staff, solely to members of the American Medical Association?

Mr. Leahy:—I believe the subject of expert opinion, if your Honor please,—

THE COURT:—Are you arguing or are you objecting?

Mr. Leahy:—I am objecting, your Honor.

THE COURT:—I think it comes down to one of the principal issues in the case.

Mr. Lewin:—It is one of the subordinate issues in the case.

THE COURT:—Put your question once more, and I will see if it is proper.

By Mr. Lewin:

Q.—You testified, Doctor, that it was in the public interest for the A. M. A. to take an interest in hospital standards. Now I ask you whether it is in the public interest for the A. M. A. to insist, as a condition for giving its approval to a hospital, that all of the members of the staff of that hospital be members of the A. M. A.?

Mr. Leahy:—That is the question to which I objected.

THE COURT:—You have drawn in the public interest in your own questions, Mr. Leahy. I think perhaps it is proper.

Mr. Leahy:—It is secondly objectionable because of the use of the word "insist."

THE COURT:—I do not know what significance that word may have. The witness may answer the question.

Mr. Leahy:—Exception, your Honor.

The Witness:—I should be very doubtful as to whether any professional group ought to be in the position to declare that its members only are competent people in the profession. It is entirely within my knowledge that able physicians have gone on for years, or for their lifetime, without being members of the American Medical Association. So I should be very fearful of giving to any professional body the right to say that their members and their members only were capable of giving good care. I think it is a risky extension of power to any group.

By Mr. Lewin:

Q.—What interest, then, could the American Medical Association properly have in the character of the staffs of a hospital?

A.—I think they have a very important interest. They have, in the first place, the machinery to inspect and examine these hospitals, which can only be done by some well organized group without considerable exertion. They can have a staff of more or less expert people who spend a great deal of their time and come to know a great deal about technic in studying the hospitals. So that I think as a group of experts giving advice to governing bodies they have a very important function.

Q.—Should their interest be limited to advice, or should they go beyond that?

A.—I do not see how it can safely be anything but advice, because the control must lie with the governing board and cannot lie with a professional group, safely.

Q.—Dr. Cabot, while you were on the stand last Friday under cross examination you were asked these two questions and you gave these answers, which appear on page 388 of the record.

A.—Can you not put them separately instead of a "shotgun prescription"?

Q.—This is a question by Mr. Leahy (reading):

"*Q.*—Suppose we are specific: Suppose or assume that the association with which this doctor is connected has been notified by the Federal District Attorney for the District of Massachusetts that they must desist from the practice in which they are then engaged, and you know this young man has made an application to your general hospital for hospital privileges, if you were advising the hospital, as a member of its staff, and so advised it that they ought to withhold the privileges from this young man pending the determination of the question, would you consider that good advice?"

And your answer was (reading):

"*A.*—That would sound like good, reasonable advice.

"*Q.*—Just what you would do?

"*A.*—Yes."

Let me put this question to you: Suppose you had received notice of the objections of the District Attorney in that case to the group with which the doctor was associated, or that in his opinion the group might be regarded as a corporation practicing medicine without itself having a license, and that the group might be regarded as engaged in the insurance business without complying with the insurance laws: if you were advising a hospital as a member of its staff, how would this opinion of the District Attorney affect your advice to the hospital upon this doctor's application?

A.—That is a very difficult question. Such an opinion of a District Attorney could not possibly affect my opinion of the capacity of an applicant for the staff. My opinion of the applicant for the staff must depend upon his professional qualifications, and could not be based upon intricacies of law which do not run at all to his ability to look after sick people.

Q.—Then if that is all that you had learned from the District Attorney, what advice would you give the hospital in regard to the admission of this physician for courtesy staff privileges.

A.—I should advise them to proceed in entire disregard of the opinion, and examine the qualifications of this physician as they would examine the qualifications of any other physician who was a candidate for their staff.

Q.—And by qualifications, what kind of qualifications?

A.—Oh, I assumed that I was talking about professional qualifications. Knowing what it was he asked to be allowed to do, I should want to study what evidence there was that he was able to do those things.

Q.—Just what did you mean when you answered Mr. Leahy's question on Friday in the way in which you did?

A.—Perfectly frankly, I misunderstood him. I understood that the charges against this hospital were of an entirely different character. Let us be perfectly brutal and frank about it. I thought it was charged that this was an abortion.

Q.—And it was on that assumption that you gave the answer which you did give?

A.—Right.

Q.—Suppose that there are charges of any kind of illegality, or charges, rather, that it might be practicing medicine without a license or engaged in the insurance business without complying with the insurance laws, and the District Court of the United States for that district, after a full hearing, had categorically decided that such charges were completely unfounded, and then such a surgeon presented again his application to the hospital for courtesy staff privileges: what advice would you give the hospital in that situation?

A.—Certainly under those conditions any possible disability has been removed. But as I suggested to you, I should not regard a legal question of the methods of operation as having anything to do with my opinion as to the capacity of this physician to do work in the hospital within his qualifications. Those are entirely different questions, according to my mind.

Q.—Then, Dr. Cabot, on that question, the question of the qualifications that a doctor-applicant must possess in order, in your opinion, to be admitted to courtesy privileges at a hospital, at least in the first instance and under wraps, let me put this question to you. Suppose the applicant for courtesy staff privileges had graduated from the University of Oklahoma or from the University of Oklahoma Medical School, and had practiced privately in one of the large cities of the United States, both medicine and general surgery, for a period of about nine years; suppose, further, that after completing those nine years, that doctor had enrolled himself as a postgraduate student in the postgraduate school of surgery, in the University of Pennsylvania, in Philadelphia, and suppose that he had completed satisfactorily the two-year postgraduate course and had received there his degree of Master of Medical Science, and suppose, further, that during that two-year course and as a part of it that same applicant held a residenceship in surgery at the Worcester, Massachusetts, City Hospital under a preceptor appointed for him under the postgraduate school in Pennsylvania; suppose, further, that while he held that residency he performed, satisfactorily to his preceptor, several hundred operations, some of them major and some of them minor, some of them in which he acted as an assistant and some of them in which he took the lead, and suppose that a great deal of that surgery was abdominal or pelvic surgery: what opinion would you give the hospital to which this surgeon applied for courtesy staff privileges as to whether, in the first instance, at least, he might safely be admitted to courtesy staff privileges in the hospital?

A.—I have a very definite opinion in regard to the course of the University of Pennsylvania Medical School. During my time at Ann Arbor, Mich., I was one of their regular preceptors and had, most of the time, one or more graduates under my care, and I am familiar with what they expected of them. I think those students got a very good training in general surgery. There are many special departments of surgery in which, of course, they did not get training. But I do not think that the University of Pennsylvania puts its stamp of approval on men who are not pretty well qualified to do general surgery. They are careful and diligent in their study and qualifications, and a man having received such a degree, I should feel required to admit him to the staff for the practice of general surgery, with reasonable limitations as to the more difficult and trying situations.

Q.—Suppose that applicant, Dr. Cabot, happened to be the general surgeon for a large group of patients associated in a prepayment clinic: would that influence your decision against advising the hospital to take him as you have stated?

A.—Oh, no. The only question with which I should be concerned would be his qualifications and the suggestion to the hospital of the extent to which they ought to provide supervision.

Q.—Would the fact that he was associated as a general surgeon for this group of patients have any bearing one way or the other in your opinion?

A.—No, sir. I assume that what the hospitals want of me is the value of my opinion, if it had any value, as to his qualifications. It does not seem to me important whether he is dealing with a group of patients or with his own private patients.

THE COURT:—Let me suggest that one or two of your questions have been repetitious. I do not want to take up too much time on these things. Please try not to repeat.

By Mr. Lewin:

Q.—And would the fact that the applicant has applied for a great many privileges at that hospital rather than confining his application to one or two types of surgery affect the advice you would give the hospital with reference to his application?

A.—It would depend on what those fields were. If he had asked the privileges in an unreasonably large group of special fields, I should doubt whether his training at the University of Pennsylvania justified granting his application with respect to all of them. I shouldn't hesitate at all to suggest to the staff some fields in which he was entirely competent; as to other fields, I should want to supervise his work carefully.

Q.—But would you hold against that man the fact that he had asked for broader privileges than perhaps those which you would accord him?

A.—Oh, I suppose most of us ask for more than we expect to get in most instances.

Q.—And do I understand you would recommend to the staff to admit him to those privileges to which you felt he was by reason of his training entitled, and deny him those privileges for which you felt he did not have adequate training?

Mr. Leahy:—Objected to.

THE COURT:—He may answer that question.

The Witness:—Oh, yes; I have no doubt I should do that.

By Mr. Lewin:

Q.—You may recall that on cross examination by Mr. Leahy you gave some testimony differentiating to some extent what you call the producer group from the consumer group of practice; and you were asked in effect on cross examination whether or not you would seek in advance, in forming a consumer type of group, advice solely from medical men. You testified that

in selecting a medical staff you would like the advice of a medical man. Let me ask you this: Whose advice would you seek in that situation with regard to the social and business side of the organization, as distinguished from the medical staff and medical equipment and facilities?

A.—Quite clearly the group has two or three very different problems with which it is faced. It is faced with problems which may be called strictly financial. Others I would define as economic, and certainly a group organization must take widely into account the social problems which are involved in this rather novel method of providing medical care. Now, in those problems, I take it nobody would suggest that an expert of the medical profession is also an expert in those other fields. As a matter of fact, I would think him less qualified than the average sound man in the street.

Q.—Then whose advice would you seek on the financial, economic and social questions arising in setting up such a prepayment clinic?

A.—I should try to obtain for my board, or for my organization, people who were properly regarded as wise counselors in those fields.

Q.—Would you go to laymen?

A.—Oh, yes; oh, certainly.

Q.—What type of advice would you seek from medical men only in forming such a consumer group?

A.—Advice concerning problems of medical organization, equipment and medical capacity. Clearly the medical profession are the only experts on whom the community may rely in those special fields; and clearly no one else is qualified to speak concerning them.

Q.—Now is there anything else you would seek; any other advice you would seek from the medical men?

A.—No.

Q.—And what types of information would you seek from the laymen in forming such a prepayment group?

A.—Of course, the lay group is concerned with the setup of the machinery about how a considerable number of people might obtain medical care by this rather modern method. Clearly that group must do its best to fit the plans which they make into the peculiarities of the community in which it is set up. Quite obviously the proper arrangement in a city, or in a district such as this here, should be quite different from what one would set up in an open country, such as in the West, or plain states. You could not make the same organization which would work equally as well under these very varying conditions, in different parts of the country.

Q.—Whom would you turn for advice of this nature: to laymen or doctors, in order to determine what kind of financing a prepayment group such as this should have?

A.—Laymen, I suppose. The doctors are or at least have the reputation of being the worst financiers in the world. It may not be quite correct, but they have that reputation.

Q.—To whom would you consult in determining the kinds of contracts which should be written for use in such a prepayment group?

A.—From my own personal experience, I should say lawyers handle such things, and generally produce documents which take care of such matters.

Q.—Would you think it was a reasonable thing in forming such a group, or in attempting to form one, to advise with persons who had formed other groups, other consumer prepayment groups in the country, and who were operating such groups?

A.—I suppose my weakness rises from approaching these problems by the scientific method, and, under the methods of science one assumes these things can't be done in vacuum. One looks to the experience of similar organizations elsewhere and from the accumulated evidence from which you can decide whether there are other organizations which fit your requirement, or whether there are some parts of one organization or some part of another which may be useful and applicable in your own structure, but where you have a more or less peculiar problem which must be set up it may be that the value of such other experiences will be diminished. However, I should want to base my decision on known existing practices of relatively similar operation.

Q.—And would you think it reasonable for the sponsors of such a group, before they launch the undertaking, to go to other groups and inspect their associations?

THE COURT:—Isn't that obvious that they would do so?

Mr. Lewin:—I hope so. It is to me.

THE COURT:—Well, from the doctor's previous answers isn't it quite obvious what the answer to such a question would be?

Mr. Lewin:—Well, your Honor, we are charged here with going into this thing with a half-baked organization, with not consulting with people who had knowledge on the subject, and therefore we want to make it clear.

THE COURT:—I don't want to be critical, but it seems to me that the testimony is not in the nature of expert testimony.

Mr. Lewin:—All right, your Honor.

By Mr. Lewin:

Q.—Now, Dr. Cabot, on cross examination, also I understood you to say, that you came down here to Washington on one occasion only to inspect the group health clinic, and to discuss its operation; is that correct?

A.—I didn't mean to convey that impression. I meant to convey the impression that I did come here on one occasion; I didn't mean to convey the impression that I only had been here once, or that I only came down on one occasion to the clinic.

Q.—Can you fix fairly definitely the first time you came, that is, the time when you went over to the clinic and saw it in operation; saw the pediatrician with the children, and the surgeon operating on the finger?

A.—I can fix it to this extent: I know that my brother, the late Dr. Richard Cabot, came down here on some occasion; it may have been at the opening of the clinic, about Nov. 1, 1937. That following that occasion he wrote me—we saw each other in those days rarely, living hundreds of miles apart—and he told me about it; and suggested to me that I ought to be interested in its development. Following that I had a letter from somebody here, maybe Mr. Kirkpatrick, to come down here. I couldn't say whether it was in December of 1937 or early in 1938, but it was relatively shortly after the occasion on which my brother was here.

Q.—Now let me, if I can, clear up one other point. Dr. Cabot, suppose a patient with very little income has a symptom of a complicated disease. Can he ordinarily obtain complete diagnosis and treatment from a single doctor?

A.—Not under modern conditions.

Mr. Leahy:—This is repetition, your Honor.

THE COURT:—I think so: I think you went into that on direct examination.

Mr. Lewin:—I am afraid there were several points that were not covered, your Honor.

By Mr. Lewin:

Q.—How many doctors might you expect such a man might have to obtain service from in order to be properly treated, under such circumstances?

A.—It wouldn't be unusual to require the services of from four to six more or less specialized people before you had the rounded evidence necessary to properly care for the patient.

Q.—And ordinarily would he be subjected to that number of individual fees?

A.—Oh, I think so, under normal conditions.

Q.—How many such doctors might such a person have to consult if he came to a clinic, like the Mayo Clinic?

A.—There the number would not be limited. He would be at once under the care of one of the general physicians, who would associate with themselves some of the younger men, the fellowship group, get the history and make the physical examination. He would then normally examine the patient himself. He would then call to his assistance any expert whom he thought could be helpful and might very easily call five or six. It would make no difference to him. He could call all the experts in the clinic if he thought they would be of any use at all. His business is to get the most rounded picture; it makes no difference how many people would be involved.

Q.—Would the amount of the fee that the patient would pay in the Mayo Clinic be determined by the number of men he received treatment from in the clinic?

A.—Oh, no.

Q.—Would you regard the fact that one of these group prepayment clinics did not hold itself out to do charity work for indigents as putting that clinic's operations in a class operating in what might be said to be against the public interest?

A.—Certainly not.

Q.—What is your reason for that?

A.—A group organization undertakes to do a perfectly definite thing, which is to provide complete medical care for its subscribers. It does not undertake to do anything else. Now, if it should spend the time of its staff in looking after people who are not subscribers then it would be guilty of an improper use of those funds, in my opinion.

Q.—Would you regard that clinic's operation as unethical, simply because it did not hold itself out to do charity work, but confined itself to its own subscribers?

A.—Certainly not.

Q.—Doctor, is it true that a doctor who devotes himself only to group practice, such as this, is neglecting his share of the responsibilities which the medical profession bears for the care of the indigent?

A.—I can't think so.

Q.—And what is your reason for that answer, Doctor?

A.—He is planning to give his services in a way which seems to him to enable him to make use of his training to the best advantage, and his arrangement with this group gives him a satisfactory opportunity to use his skill and his knowledge; and, after all, that I think is the opportunity which he should take advantage of; the chance to use his skill in the treatment of sick people.

Q.—Just how can the "fee-for-service," Doctor, afford to take care of the indigent, and assume a share of the burden of taking care of the indigent?

A.—The time-honored method is by levying an unconscionable and illegal, an unauthorized tax, an income tax, and surtaxes on a relatively small class of the population who are classified as rich. They pay large fees which, in the aggregate, authorizes him to spend his time in a very desirable way in looking after people who can pay him less than the cost, or nothing at all. He obtains funds from one group which enables him to carry on his work and live in decent fashion, while also looking after a group of people who can contribute nothing.

Q.—And the group practice, Doctor, under the prepayment plan, has not the same opportunity of soaking the rich for the benefit of the poor; is that what you mean?

A.—He is, as a rule, on a salary or some similar arrangement, under which, as I think very desirably, it makes no earthly difference to him whether the patient has money or no money; that is the business for the management; to organize the group, take care of those things. That settles the question for him.

Q.—Now suppose a doctor of one of these clinics, who is employed on a full-time basis, and can't take care of the indigent at a hospital, applies to the hospital for courtesy staff privileges: should the fact that he cannot serve on the regular staff and take care of the indigents prevent him from receiving courtesy staff privileges?

A.—Courtesy staff privileges, or staff privileges, are essential for him to carry on his proper medical practice. The practice he assumes to carry on there comes from the group by which he is employed. Certainly no stigma is attached because he practices on patients who have subscribed to this organization by which he is employed.

Q.—Now, Mr. Leahy also asked you on cross-examination what you thought of the American Medical Association Journal, and you replied that, in your opinion, it was the outstanding medical journal of the world. Now let me ask you whether in making that answer you were not referring to THE JOURNAL'S activities—

Mr. Leahy (interposing):—I object to that question; to the direct character of the question.

THE COURT:—Yes, the question is leading.

Mr. Lewin:—I will be glad to reframe the question. I thought there was no question about it.

By Mr. Lewin:

Q.—Let me ask you, Dr. Cabot, in making that answer what particular activities of THE JOURNAL had you in mind?

A.—I was thinking of THE JOURNAL as a whole. For a great many years, the greater part of the whole of THE JOURNAL was devoted to the printing of scientific papers; it provided or contributed in providing, in its small beginnings, to the literature of medicine published in this country and foreign countries, and it was essentially a scientific journal. Now, in rather recent times there has been developed there another section, a subordinate section of the journal, which dealt with problems rather loosely referred to as medical economics.

Q.—What distinction do you draw between those two branches of THE JOURNAL?

A.—In its scientific phase, which has been throughout my lifetime its most important phase, it has stood solidly on scientific ground. It has selected from the papers offered, many of which are read at its annual meeting, documents of great value; but also from other sources papers which in the judgment of the editor were of high quality, and I think it perfectly safe to say that very few second or third rate articles on the science have appeared, at least within my memory, in that journal. It has been in the habit, as is the habit of science, of allowing physicians who, having read a given article on the subject with which they are familiar, to write letters to THE JOURNAL sometimes polite and sometimes very impolite—pointing out their disagreement with statements made in those journals, and, I think, it has been the common practice of THE JOURNAL to submit such letters to the authors of the articles and, in that way, give reasonable opportunity for the presentation of opposite points of view and discussion. That is the normal method of science: you don't close the door and say here is a statement which nobody may dispute.

Now a quite different policy has been established in regard to the sections on medical economics. There, in the first place, many of the articles are prepared by members of the permanent staff of the A. M. A.

Q.—That is the salaried staff?

A.—Yes; and also from outside sources, but they are prepared often for the purpose of producing a perfectly definite point of view which may or may not represent the scientific view. Very seriously, as I think, there has been allowed no opportunity for discussion of these presentations. Many of them have been, in my judgment, and in the judgment of a good many other people, a pretty incomplete statement with very important omissions and yet, they are the source of information of a large number of busy physicians who cannot possibly go to original sources. Now, I have felt very strongly that it was essential that there should be a possibility of pointing out these omissions and weaknesses, and the differences of opinion which has been done regularly in the scientific portions of THE JOURNAL. This has been frowned upon and has been, I think, a very serious detriment to the proper presentation of the facts in these fields, using the normal scientific method of presenting the evidence and allowing criticism, where the evidence seems grossly incomplete. I would go so far as to say that there have been many articles published in that section of THE JOURNAL which would not stand up under criticism a moment and which if presented to a scientific body would be torn limb from limb.

Q.—Now, Doctor, you mentioned to some extent the function of the judicial council of the A. M. A., and I think you said that the Judicial Council passed on appeals from members of the local societies, who had been disciplined or expelled. Do you know whether there is any stay of the order of expulsion, or whether or not the local society, while the appeal is pending, whether or not the order of the local society does not stand and is effective pending the appeal, would the effect of the action of the Judicial Council, if it is favorable to the physician, be to reinstate him?

A.—I don't feel very clear about the precise limitations of that power. I would assume from what I know that the expulsion of a member did not really stick until it had been passed upon by the judicial council, if it was appealed to them; but I wouldn't like to be very dogmatic about that.

Q.—Who promulgates the rules and principles of ethics, medical ethics of the A. M. A.?

A.—It is done certainly under the supervision and authority of the delegates.

Q.—Of the A. M. A.?

A.—Yes.

Q.—And are those rules binding on the local societies, and upon the local members?

A.—I think they are intended to be.

Q.—Is there any machinery set up by the American Medical Association for applying those principles of medical ethics?

A.—I know on various occasions the questions have been referred to the Judicial Council for interpretation.

Q.—In your opinion should such principles of medical ethics lay down rules dealing with the economic side of the distribution of medical care?

Mr. Leahy:—I object; I don't think it is a proper subject for expert testimony.

THE COURT:—I don't think he completed the question.

Mr. Lewin:—I asked the witness: Doctor, in your opinion, should such principles of medical ethics lay down rules dealing with the economic side of the distribution of medical care?

THE COURT:—Both sides have been so liberal in asking the opinion of the Doctor; it has gone so far that I can't at this time say that the Doctor shouldn't answer this question.

Mr. Leahy:—All right, your Honor.

The Witness:—I have an uneasy feeling that when the ethics which are supposed to guide a profession undertake to invade fields of which they cannot have any particular knowledge, you are getting on pretty thin ice; and I dare say that the opinion of men who may be experts in the medical field

when applied to economic questions would not be very binding or anyone. I would frankly say that I should feel very much inclined not to be bound by them myself.

RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—Doctor, you will agree with me, won't you, that the American Medical Association is composed of practically 115,000 doctors in the United States?

A.—The last knowledge I happened to have; the last annual I happened to notice I think stated it at about 110,000, but I don't keep accurate track of that.

Q.—You would think that the opinion of 110,000 doctors should be worth consideration, wouldn't you?

A.—Yes.

Q.—Particularly, with reference to matters of the medical profession, isn't that right?

A.—I don't think I understand your question as it relates to "matters of the medical profession."

Q.—Well, with the practice of the medical profession.

A.—Yes.

Q.—Do you think their opinion is of value and that is in fact the only expert opinion with respect to the methods by which the profession should be conducted?

A.—In so far as that it confines itself only to the question of medicine, yes; but I should not take that opinion seriously when it involves questions of finances, economic or social readjustment.

DISAGREEMENT WITH PRINCIPLES OF ETHICS

Q.—Do you think that there are any principles of medical ethics as they have been adopted by the American Medical Association with which you cannot agree?

A.—Yes.

Q.—Which one?

A.—Well, I am interested in the very complete prohibition of what is known as "solicitation," the phrase, if I remember it; the provision that solicitation by individuals or groups, or by organizations is strictly forbidden.

THE COURT:—This question has nothing to do with this case, so far as I understand it.

Mr. Leahy:—Your Honor, it will be in the case.

Mr. Lewin:—Yes, your Honor, I think so.

THE COURT:—Well, if both sides agree, he may answer it.

By Mr. Leahy:

Q.—Well, Doctor, do you believe in a doctor advertising?

A.—I think I would like to answer the question. I think I observed in this group in California which was set up in the last few years, with a very broad offering of medical services—it was known as the California Physicians' Service, I think—that a very considerable sum of money was used for what you, if you were selling insurance, would be called solicitation. I was still more interested in a recent bill put forward by the Massachusetts Medical Society, concerning which there was published in the *New England Journal of Medicine* a statement of the purposes of the bill, in which it was directly stated that about 10 per cent should be used for solicitation. That being the case, I don't think that particular provision of the A. M. A. should be taken very seriously. Organized medicine has chucked it out of the window, and I think the rest of us need not concern ourselves about it.

Q.—You mean they have chucked what out the window?

A.—They have chucked out the absolute prohibition of the solicitation in medicine as a violation of ethics; chucked it out the window and, as I think, have very wisely adopted modern conceptions, and let their rule look out for itself.

Q.—Now, was there any other principle of ethics with which you disagreed?

A.—Yes, there was a principle of ethics which is less binding now, which forbade physicians to consult—I am not quite sure of the phrase, with irregular practitioners, the implication being that members who were not members of the medical profession should not be in consultation with men who are. Now for thirty-five years I have disagreed with that prohibition, and I have never embraced it.

Q.—How long has that particular principle of ethics of the American Medical Association been in force?

A.—Very long, indeed. There was a fierce controversy. Homeopathy was the principal *bête noire* of the American Medical Association, and then there came along a group known as osteopaths. There was a strict prohibition against consulting with these people.

Q.—Do you know whether that was ever adopted by the American Medical Association or not?

A.—I would not like to be too dogmatic about that. I know it was in the state, in the Massachusetts code, and I think still is.

Q.—The code of ethics of the American Medical Association is quite a long code, isn't it?

A.—Yes.

Q.—Do you know how long your profession has been acting under a code of ethics?

A.—Certainly for many years. The origin of the document which we now use goes back more than a century, and I suppose in pretty definite form, perhaps for a century and a half; and, of course, the fundamentals of the code of ethics—unless I have been grossly misinformed—was laid down by Hippocrates. The Hippocratic code contains an oath of the requirements of decent and professional probity which we are trying to get at.

Q.—Now, do you think that the individual professional man should advertise his wares?

A.—I do not.

Q.—You think it is when a group of individuals get together that that group should have the right to advertise; is that it?

A.—I think the point comes where the public interest is involved. Here are new methods by which it is suggested that the public may obtain good medical care at more or less definite rates. It seems to me absolutely essential that there should be a satisfactory method, and unprejudiced methods by which the public may obtain this information. The prohibition is likely to make it difficult or impossible for the public to obtain information on which they can come to a conclusion.

Q.—Does the Mayo Clinic advertise?

A.—You put me in an awkward position, sir. There have been times when I thought they had come pretty close to the line.

Q.—Now, does the Mayo Clinic solicit people to come to it?

A.—No.

Q.—Does the Lahey Clinic in Boston solicit patients to come to it?

A.—I should be unwilling to say that it did not.

Q.—Does it advertise in the papers asking for or soliciting patients to come there?

A.—No.

Q.—Can you name a producer clinic that advertises?

A.—I don't think so, sir.

Q.—The only advertising clinics now which you say ought to have the privilege of advertising are these consumer clinics that grew up in the last ten years?

A.—No, sir.

Q.—Do you know any consumer clinic which has not tried to advertise?

A.—I think I do; the group with which I have been associated myself.

Q.—Well, excluding your group.

A.—I should be unable to say what was the practice of consumer groups; it would assume an omniscience which is beyond me.

Q.—Well, you do believe in the consumer method, do you?

A.—I very much want to see it tried on an experimental basis.

Q.—Well, have you any data yet from your experience or your readings about which you can state to the jury that the consumer group type of practice of medicine is an assured successful one?

A.—Well, I am very interested to note that the Northern Pacific Railroad has had a group method of medical care since 1882, and the evidence I believe is to the effect that it is successful.

Q.—Well, Doctor—

Mr. Lewin: I don't think he has finished his answer.

Mr. Leahy: Very well.

The Witness:—Then I think the group, the Stanocola Group, in Baton Rouge, Louisiana, has been doing this work, and that is a consumer group.

Q.—Well, on your various trips to Washington didn't you learn that there were eight groups which were similar in organization to the Northern Pacific group and the Stanocola Group which you have just told us about?

A.—I don't think I got the information in Washington.

Q.—You didn't know that they had been operating in Washington for years?

A.—Who?

Q.—These groups. Didn't you while you were here studying Group Health know that for instance the Market Compensation Accident Clinic had been in operation here for years?

A.—No, sir. Never heard of it.

Q.—Did you know the Union Market Workmen's Compensation Clinic had been in operation here for years?

A.—No, sir.

Mr. Lewin:—Your Honor, all of these questions were asked before.

THE COURT:—I think it is repetition.

By Mr. Leahy:

Q.—You didn't know then that any of those group clinics were operating?

A.—No, sir.

Q.—Well, those are a different type from Group Health?

A.—I don't know a thing about it, sir.

Q.—Well, is the Northern Pacific Clinic similar to Group Health?

A.—No. It is under different conditions; it couldn't be.

Q.—It is an employment group, isn't it, the Northern Pacific, attempting to take care of its employees?

A.—Oh, no, no.

Q.—What is it?

A.—The Northern Pacific isn't attempting to take care of the employees; the employees are attempting to take care of the employees.

Q.—With the cooperation of the Northern Pacific?

A.—I couldn't say how much cooperation they have had.

Q.—And is the Stanocola Clinic which you mentioned also a clinic which is restricted to the employees of the Standard Oil Company?

A.—Employees and their dependents.

Q.—Employees and their dependents. And do you know now whether the Standard Oil Company cooperates with their employees in attempting to take care of them for injuries received or suffered in the service?

A.—Of course, the Standard Oil Company is responsible for those things which come under the Compensation Act, so there must be some reasonable articulation between those things which the company is required to do and those things which the association provides.

Q.—But now the clinic of the type of G. H. A. is built along a different theory, isn't it?

A.—I should not think so, sir.

Q.—Well, the Group Health or any of these consumers clinics take in anyone who will subscribe for the service. Isn't that true?

A.—Well, I rather thought it was intended to confine it to a group of people who were here in Washington employed by the Government.

Q.—That's right. Also any one of that group who will subscribe to the service is entitled to the service?

A.—Therefore it is just like the Northern Pacific.

Q.—But state who is entitled to the service. Is it the sick man or the well man, do you know, upon entrance?

A.—I suppose anybody that subscribes therefore becomes entitled to the service. I suppose they wouldn't take him at the moment if he happened to be sick abed, they would think they had better wait and let him get well.

Q.—Well, why would they do that? Isn't the sick man the one who needs medical care when he is sick?

A.—Oh, quite.

Q.—What do the groups do for the sick man then when he is sick?

A.—Look after him.

Q.—They don't look after him though if he is sick when he wants to join?

A.—I think they require their members not to overload themselves with an unreasonable number of sick men at the time of admission.

Q.—Why do they do that?

A.—In order that the funds contributed by the various subscribers will be prudently used.

Q.—In other words, otherwise the funds of the organization wouldn't be sufficient to take care of an overloaded group of sick people?

A.—They must have an average cross-section of the population, and it is upon that basis that they assume ability to do the job.

Q.—Well, what proportion, have you any statistics upon it, does this consumer group take in people who are ill and who want to join the association for care because they are ill?

A.—You refer to this particular group in Washington?

Q.—Yes.

A.—I couldn't answer, sir.

Q.—How about any other group that you know about?

A.—The custom in groups that I know to admit patients is for some of them require a physical examination for admission. If that patient has certain disabilities, those are made exceptions for which further payment must be made. They try to get a group of average people; many of them except people over a certain age, just as insurance companies do; and there are various other exceptions.

Q.—Now, who is going to take care of the sick person or the sick people who cannot belong to the consumer group without overloading it?

A.—Oh, there is no prohibition of their being looked after by the consumer group. The only prohibition that I am aware of is that they cannot be looked after under this particular contribution which is regarded as sufficient.

Q.—You have just told us, Doctor, that the consumer group cannot overload itself with too many sick people, haven't you?

A.—At average admission rate fee, sir.

Q.—If they do, they must charge additional fees. Is that right?

A.—Yes, sir.

Q.—Or else leave the general doctor to take care of him?

A.—Yes.

Q.—That's right, isn't it?

A.—Yes.

Q.—In other words, if the group on physical examination—haven't you found it to be the practice, that where the member of that group is suffering from some ailment requiring treatment, he isn't admitted?

A.—It would be very hard for me to generalize. I know that they are frequently admitted with these conditions specified for which either extra payment or treatment outside should be obtained.

Q.—Have you ever studied the by-laws of the Group Health Association of the District of Columbia, Doctor?

A.—No, sir.

Q.—Has any one ever presented them to you for your advice?

A.—I don't think so.

Q.—Doctor, you stated that in your judgment if the American Medical Association insisted that all hospitals should have on their staffs only members of the American Medical Association, that that would be going outside the field of the American Medical Association.

A.—I don't remember saying anything that I should understant means that, sir. Could we read my answer?

Q.—I will put the question so we won't take up time in going back to it:

Do you think that the American Medical Association, composed as it is of all these doctors, should keep in close contact with the affairs and the administration of the hospitals throughout the country?

A.—Oh, yes, sir.

Q.—You think that it is in the public interest?

A.—I clearly think so.

Q.—Do you think it is in the public interest that they should inspect the hospitals in order to determine whether or not those hospitals are maintaining the standards?

A.—I think it is important that they should inspect them in order to have an opinion which they may then place at the service of the public, as represented by the trustees.

Q.—Do you think that the American Medical Association would have or would be within its proper sphere of activity if it sought to establish a policy in the hospitals by persuasion, advice, that the members of the hospital should be members of the American Medical Association?

A.—Well, I should think they would cut pretty close to the line of trying to mind somebody else's business.

Q.—With respect to what?

A.—With respect to telling an organization what it should do. I don't quite like the notion that a group can advise these trustees for the public interest what they may do and what they may not do. That doesn't smell good to me.

Q.—Well, didn't you tell us that the board of trustees usually sought the advice of the medical profession as to those members who ought to be appointed on the staff?

A.—Oh, quite. They seek their advice. That is the point, they are not required to follow it. I think they must retain their own independence of action.

Q.—That is the point which I wish to bring out, Doctor. If the board of trustees in a hospital asks the medical profession with respect to the appointments upon its staff in a given

hospital, is it contrary to the public interest, in your judgment, that the medical society of that particular locality should recommend its own members?

A.—Oh, no.

Q.—Or should recommend that the board should try to select its members on its staff from its medical society?

A.—As long as it remains in the field of recommendation they are on perfectly sound ground.

Q.—In other words, the trustees should always have the jurisdiction to appoint. Isn't that right?

A.—I think they must, sir.

Q.—Yes. But there is no harm in some one making a recommendation or suggestion to the trustees and stating the reason for such advice, is there?

A.—No. I think it is very important they should.

Q.—Now, Doctor, you have discussed your answers, haven't you, since you gave them last Friday to counsel for the prosecution?

A.—Yes.

Q.—You went all over what you said last Friday to the jury in preparation for your re-direct examination this morning on the stand, didn't you?

A.—Oh, Lord, no.

Q.—Didn't you read over your testimony?

A.—No.

Q.—Did you have it read over to you?

A.—Indeed not.

Q.—Have you discussed the answers which you gave to certain points in the questions?

A.—Certain answers were discussed, yes.

Q.—And one of those answers which was discussed with you was the answer with reference to what in your judgment was the necessary advice you should seek from doctors in forming a group association?

A.—I don't think so.

Q.—You will recall that you made this answer on Friday last, that you considered that any group which was about to organize a group for medical care needed the advice of physicians?

A.—Oh, yes.

Q.—Do you still stick to that answer?

A.—Sure fire.

Q.—All right. Now, they need the advice of physicians with reference to what?

A.—To the problems involved in medical care and the necessary equipment to give it.

Q.—Now, who ought to give that advice?

A.—The members of the medical profession.

Q.—Do you think that if a group were to organize itself here in the city of Washington that it would be wise for the group to discuss those questions you just gave us with the Medical Society of the District of Columbia or its members?

A.—I wouldn't be fussy about discussing it with the society.

Q.—Or the various members thereof?

A.—I should discuss it with the physicians whose opinions I value.

Q.—Would you think that any particular reason existed why the members who are promoting the group should not discuss it with any members of the local society?

A.—No, no.

Q.—Can you think of any reason now why a group attempting to form a group for the distribution of medical care should avoid discussing it with the members of the local medical association?

A.—Well, just as before, they must discuss it with physicians. It isn't in my opinion necessary that all of those physicians should be members of the medical society. There may be some very wise people, there have been all over the country, who are not members, and I should regard their judgment as of interest. Certainly a majority of the people they consult will be members of the medical society.

Q.—Well, is there any reason which exists to your mind why a member of the local medical society should not be called in for advice?

A.—No.

Q.—In other words, membership in the local society ought not to exclude a member as one who could advise on those questions you have just told us?

A.—No.

Q.—What particular problems were there in connection with the establishment of a group health plan, consumer group, which would require a discussion with others than doctors?

A.—Oh, the whole problem of finance, that is to say, the methods of raising money, how much—what size of fund you ought to have in order to make it possible to do the things that ought to be done; the very difficult problem of charges in regard to the subscribers and for his dependents at various levels. Those are questions in which the medical expert has no particular qualification.

Q.—Who do you think should determine what equipment is required, a doctor or a businessman?

A.—The kind of equipment should certainly be determined by a physician. The precise details of purchase for instance, and so forth, are business problems.

Q.—Who would determine the quality of care which should be given to the members of the group?

A.—It cannot be determined by anybody but physicians, sir.

Q.—Who would determine the number which should constitute the staff in order to give complete medical care?

A.—Well, I should have to say God only knows. I don't think anybody is capable of doing it in the present state of our knowledge.

Q.—Who could best approach it, the doctor or the businessman?

A.—Well, there are a number of people who are not physicians who could bring to that discussion evidence as to the number and kinds of physicians that have in fact been used in other organizations, and I think there are some opinions in this country by people who are not physicians in whom I should be interested. As a rule, however, it is a medical problem.

Q.—Doctor, you mentioned on your re-direct examination some of the articles in the American Medical Journal which you stated would be torn limb from limb. Could you name some of those articles?

A.—Well, there was a series of articles which dealt importantly with the development of compulsory health insurance in England and in other countries. I read them with care, it being a field in which I have long been interested. There were very important omissions there which I think would have raised violent comments if they had been presented before a scientific body as a scientific paper. They were obviously intended to drive home a particular point which it was the desire of the organization to drive home.

Q.—Who wrote the articles, do you know?

A.—Well, a good many of them were written by members of the paid staff and I assume came under the purview of Dr. Fishbein as editor.

Q.—Were they editorials?

A.—There were editorials referring to them but I was at the moment thinking largely of articles such as might have properly been presented at scientific meetings.

Q.—Could you tell us about how long ago they were written?

A.—Well, they began to appear in the middle 20s. I couldn't fix the date accurately. But of course they went on for a number of years, probably over a period of ten or more years. And they have been more or less appearing since.

Q.—Now, were there any others than on group compulsory insurance?

A.—Yes, there were comments on group organizations and the attempts to experiment in the formation of groups, in which it seemed to me that a very biased opinion was expressed, and one intended to convey to the busy physician through the only source which he is likely to read, a very incomplete opinion.

Q.—Now, Doctor, one other question. Do you mean to say that if you knew that a doctor was connected with some organization which the District Attorney had told you was engaged in illegal practice, that you would advise the hospital upon whose staff you were a member, to accept a doctor who was thus engaged in furthering what the District Attorney had declared to be illegal?

A.—Well, I wasn't aware that an opinion by a district attorney constituted a legal prohibition. It is an opinion, is the answer.

Q.—But you, in disregard of that opinion, would still recommend that doctor?

A.—I should recommend them to examine his qualifications, and if he had the qualifications, I see no reason why he shouldn't be admitted to the hospital, the same as any other physician is.

Q.—Even though by recommending him you would be assisting in the continuation of a practice which the district attorney had declared in his judgment to be illegal?

A.—I should want to know what the facts were, not what somebody's opinion was.

Q.—Then you wouldn't regard the district attorney's opinion in the matter at all?

A.—I don't believe I would, sir.

Q.—Suppose you had the supporting opinion of the responsible prosecuting officer for that particular city and they both agreed that it was illegal, would you still admit that doctor, or recommend his admission to the hospital?

A.—Well, my experience with such opinions has been that they stood about as good a chance of being wrong as right, and I wouldn't want to be bound by them until they had something further behind them.

Q.—And you wouldn't consider then that it would be well to wait until you found out whether the District Attorney and the responsible prosecuting municipal officer were right or wrong?

A.—I don't think it would bear upon the qualifications of a physician, which is, after all, the point on which I am giving advice.

Q.—Supposing the physician was qualified but he wasn't licensed to practice, would you still recommend his admission to the hospital?

A.—I don't suppose he could if he wasn't licensed—

Q.—Well, he has all the qualifications. Would you recommend him if he didn't have a license?

A.—If I did recommend him it would have no effect. He couldn't practice.

Q.—Well, would you?

A.—No. Of course I wouldn't.

Q.—But you still maintain that you would recommend a doctor who was qualified even though you had the responsible opinion of those two men in the community that the practice in which he was engaged was illegal?

A.—Well, the things are of entirely different order. One is a legal fact, he is licensed by the proper authority. The other is an opinion given by an officer of the law but having no standing with me until it has gone further than that.

Q.—Let us go one step further and let us say the question of whether or not the practice was legal or illegal was then before a Judge in the Court in that particular community. You would still in that state of the case recommend that the doctor should be admitted to the practice in the hospital? Or would you say "Let us wait and find out about this practice?"

A.—I have regarded it as due respect to a Court not to act in a matter while questions were before the Court. I think that is quite different from acting in the presence of an opinion. If it is before the Court I think I should be required to wait until that Court had issued a judgment.

Q.—That's all.

FURTHER RE-DIRECT EXAMINATION

By Mr. Lewin:

Q.—These articles that you criticized appeared in the American Medical Association Journal and were the articles dealing with medical economics. Is that right?

A.—I suppose that ought to cover the definition. They deal with kindred matters.

Q.—Did those articles in your opinion represent the individual advice and opinion of 110,000 individual doctors?

Mr. Leahy:—I object to the queston as too leading.

THE COURT:—Obviously, Mr. Lewin, he said they were written by particular persons.

Mr. Lewin:—Mr. Leahy asked this witness whether he would give weight to the opinion of 110,000 doctors. Obviously his question was addressed to these economic questions.

THE COURT:—I think we will save time to let the doctor answer.

The Witness:—Can the question be read again?

(The pending question as above recorded was read by the reporter.)

The Witness:—Oh, no. Obviously, it is out of the question.

By Mr. Lewin:

Q.—And would you say, speaking generally, that this section of THE JOURNAL which deals with medical economics or organization, and all that sort of thing, that those views there expressed represent the individual views of 110,000 doctors?

A.—Oh, no.

Q.—Suppose that the A. M. A. indicates to a hospital that the hospital may be withdrawn from its approved list for intern training and resident training unless it confines its staff to members of the A. M. A., would you think that went beyond advice and recommendation?

A.—I should think it was a grossly improper procedure intending to do something which is wholly against public interest.

Q.—You wouldn't include that sort of a situation in the desirable advice and opinion that you think hospitals ought to seek from the medical profession?

THE COURT:—Mr. Leahy has already asked him that and he has already answered it, Mr. Lewin. One answer covers both the questions.

By Mr. Lewin:

Q.—You were asked your opinion on certain principles of the medical ethics of the A. M. A. I want to ask you what your opinion is of this principle of the medical ethics of the A. M. A. dealing with contract practice. It is as follows:

"Certain features or condtions if present make a contract unethical, among which are"—

and then they list seven criteria, and the seventh is:

"If the contract becomes because of any of its provisions contrary to sound public policy."

Would you care to comment upon the desirablity of that kind of principle?

A.—Why yes. It is news to me that a medical association or any other professional association is a proper judge for me of what is in the public interest. I don't think they are endowed with the ability to decide. I shouldn't pay the slightest attention to it.

Q.—You shouldn't pay the slightest attention to it.

A.—Not the slightest.

Mr. Lewin:—Well, I think in deference to your Honor's request I will retire from examination.

THE COURT:—Anything more?

Mr. Leahy:—I just want him to identify one article, if your Honor please.

FURTHER RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—Doctor, are you familiar with this article in the *American Magazine* (indicating)?

A.—Yes.

Q.—"Give the patient a break?"

A.—Yes.

Q.—You have read that article?

A.—Yes.

Q.—Are those your views as expressed in the article?

A.—In general terms, yes, sir.

Mr. Leahy:—May it be identified as Defendants' Cabot Cross-Exhibit No. 1?

(The magazine entitled *American Magazine* was marked Defendants' Cross-Exhibit No. 1, for identification.)

DR. BOWMAN C. CROWELL

DIRECT EXAMINATION

By Mr. Kelleher:

Bowman C. Crowell, Chicago, said he had devoted the most of his life to pathology.

He is associate director of the American College of Surgeons, which has something over thirteen thousand fellows.

Q.—How is fellowship in the American College of Surgeons obtained?

A.—First on application and the presentation of proper credentials. Do you wish me to explain?

Q.—Yes. Will you explain what the credentials are?

A.—The applicant must have been graduated from medical school for at least seven years and have filled out the formal application blank giving references to surgeons who are acquainted with him and his work. That application is presented to local credentials committees. If approved by them, after having seen the applicant and talked with him—if approved by them, he has to submit to certain other qualifications and presentation of records of surgical work that he has done.

Q.—When was the American College of Surgeons founded?

A.—In 1913. The articles of incorporation were in 1912.

Q.—Who was the leader in founding the organization?

A.—Dr. Franklin H. Martin. There were four or five among those who founded it. Dr. Franklin H. Martin was one; Dr. John B. Murphy, Dr. Edward Martin of Philadelphia, Dr. A. J. Ochsner, and one or two others.

Q.—Now, Dr. Crowell, will you describe to the jury in a general and brief way the nature of the activities of the American College of Surgeons?

A.—The College was founded for the purpose of improving the standard of the practice of surgery. It has engaged in a number of activities. One of its prime activities has been the standardization of hospitals, which was undertaken in 1918 for the improvement in the conditions surrounding the surgeon where he has to do his work for the benefit of the patients.

He said the American College of Surgeons inspects hospitals and approves those that meet its standard. It does not require that hospitals approved by it have on their staffs only members of the American College of Surgeons or of the American Medical Association. It is an international organization and approves hospitals other than those in the United States.

He then described in general terms the work of the American College of Surgeons.

THE MEDICAL SERVICE BOARD

Q.—Now, Dr. Crowell, did the American College of Surgeons ever have what was known as a medical service board?

A.—It did.

Q.—By whom was that board appointed?

A.—By the president of the organization at that time.

Q.—Who was the president at that time?

A.—As I recall it, it was Dr. Bentley Squier.

Q.—What was the purpose and what were the duties of the Medical Service Board of the American College of Surgeons?

A.—To study the provision of more adequate medical service to the communities.

Q.—What were the circumstances leading up to the appointment of this board by the president?

A.—General interest in the subject of the provision of more adequate medical service to the communities throughout the country and the desire of the board of regents to furnish to its fellows and the hospitals which were looking to it for guidance certain principles which might properly guide them.

Q.—Who were the members of the board?

A.—May I read them?

Q.—Is that the report of the board that you have there?

A.—This is the report of the Medical Service Board.

Q.—Will you refer to that and tell us who the members of the board were?

Mr. Burke:—Will you tell us in what year that whole thing happened?

By Mr. Kelleher:

Q.—When was this board appointed?

A.—On July 15, 1933.

The report to the board of regents was made on June 10, 1934, by the following committee: Dr. Robert B. Greenough, of Boston, chairman; myself as secretary; Dr. G. Harvey Agnew, of Toronto; Dr. Charles A. Dukes, of Oakland; Dr. Franklin H. Martin, of Chicago; Dr. C. Jeff Miller, of New Orleans; Eugene H. Pool, of New York; Arthur M. Shipley, of Baltimore; Dr. J. Bentley Squier, of New York; and Dr. S. Marx White, of Minneapolis.

Q.—I believe your testimony in naming the members has already indicated that they were all doctors?

A.—Yes, sir.

Q.—Were they all surgeons?

A.—No, sir.

Q.—Were they all engaged in private practice?

A.—No, sir.

Q.—Which doctors were not engaged in private practice?

A.—Dr. Agnew, myself, and Dr. Martin, although Dr. Martin had been in private practice previously.

Q.—Is it your testimony now that the rest of the members of the committee were engaged in private practice?

A.—Yes.

Q.—Did the board—the Medical Service Board—conduct the study for which it was appointed?

A.—It did.

Q.—What was the nature of the study which the board conducted?

A.—They were familiar with the findings of some other committees which had been studying this same subject—

Q. (interposing.)—The findings of what committee?

A.—I was referring there particularly to the Committee on the Costs of Medical Care.

Q.—What is that committee, Dr. Crowell?

A.—I am unable to state by whom that committee was appointed; I have forgotten.

Q.—Do you know who the chairman of the committee was?

A.—No. No, I don't remember its personnel. It was a well recognized committee at the time.

Q.—Did the Medical Service Board make a report to the board of regents?

A.—It did, sir.

Q.—Was the report of the Medical Service Board unanimous, or were there any dissenters?

A.—To the best of my memory, unanimous.

Q.—Did you vote in favor of the report of the Medical Service Board?

A.—I don't recall that any formal vote was taken. It was generally conceded that this was the opinion of those who were on the committee as they sat around the table.

Q.—Did the board of regents take any action on the report of the Medical Service Board?

A.—It approved the report of the Medical Service Board.

Q.—What was the vote of the board of regents in approving the report of the Medical Service Board?

A.—I don't recall that there was any dissension.

Mr. Kelleher:—I will ask to have this paper marked for identification.

(Paper entitled "Report of Medical Service Board" was marked as United States Exhibit 7 for identification.)

(Counsel for all parties approached the bench and conferred with the Court. The conference was not recorded. Counsel then returned to the trial table, and the trial was resumed as follows:)

Mr. Kelleher (reading):

"Report of Medical Service Board.

"On July 15, 1933, on authorization of the Executive Committee of the Board of Regents of the American College of Surgeons, Dr. J. Bentley Squier, President, appointed a Medical Service Board to study the provision of more adequate medical service to the whole community. The Medical Service Board consists of Robert B. Greenough, Boston, Chairman; Bowman C. Crowell, Chicago, Secretary; G. Harvey Agnew, Toronto; Charles A. Dukes, Oakland; Franklin H. Martin, Chicago; C. Jeff Miller, New Orleans; Eugene H. Pool, New York; Arthur M. Shipley, Baltimore; J. Bentley Squier, New York; S. Marx White, Minneapolis.

"On June 10, 1934, the Medical Service Board made a report to the Board of Regents of the College which was approved by that Board. The report is a statement of principles which should be observed in the development and conduct of prepayment plans for medical and hospital service, and does not propose any specific plan. The report follows:

"Report of Medical Service Board of the American College of Surgeons, June 10, 1934.

"The Medical Service Board of the American College of Surgeons respectfully submits the following report to the Board of Regents.

"1. The American College of Surgeons affirms its interest and its desire to cooperate with other agencies looking toward the provision of more adequate medical service to the whole community.

"2. The College believes that it is the duty of the medical profession to assume leadership in this movement and to take control of all measures directed to this end.

"3. Encouragement should be given to the trial of new methods of practice designed to meet these needs, and a careful evaluation of their success should be the duty of the medical profession before they are offered for general adoption. All such new and experimental methods of practice must be conducted strictly in accordance with the accepted code of ethics of the medical profession in order that the interests of the patient and of the community may be protected.

"4. The College recognizes for immediate study four groups of the population for whom more adequate medical service should be made available, as follows:

"a. The indigent.

"b. The uneducated and credulous members of the community.

"c. Those who because of limited resources are unable, unaided, to meet the costs of serious illness and hospitalization.

"d. Those living in remote districts where adequate medical service is not obtainable.

"5. The care of the indigent sick should be a direct obligation upon the community and (unless otherwise compensated by intangible benefits such as staff and teaching appointments, opportunity and experience) physicians fulfilling this public service should receive remuneration.

"6. The College should work in cooperation with other medical groups in order to dispel the ignorance and credulity of the public, and to bring the people to a proper realization of the protective and curative resources of modern medicine.

"7. The American College of Surgeons recognizes that the periodic prepayment plan providing for the costs of medical care of illness and injury of individuals and of families of moderate means offers a reasonable expectation of providing them with more effective methods of securing adequate medical service.

"A number of different plans for the organization of such services have been proposed, although few have been in operation long enough to permit definite conclusions in regard to their success. It is to be desired that these experiments be continued. Conditions differ to such a degree in different parts of the country that a specific plan which is practicable in one place may require modification of details in other communities. The varying restrictions imposed by present insurance laws in different states further complicate the problem.

"Periodic prepayment plans providing for the costs of medical service may be divided into two classes:

"A. Payment for medical service.

"B. Payment for hospitalization.

"Plans for the payment of hospitalization alone (class B) without provision for payment for medical service may be considered the first project to be undertaken in the average community.

"The American College of Surgeons believes that certain general principles can and should be established, the observance of which will tend to obviate known difficulties and dangers which may threaten the success of these special forms of medical service. These principles are as follows:

"a. Periodic prepayment plans for medical service should be free from the intervention of commercial intermediary organizations operating for profit. After deduction of the clerical costs of operation of the fund and such accumulation of reserve as may be advisable in the interest of the contributors or may be legally imposed, the full amount paid by the contributors should be available for medical and hospital services.

"b. In the interest of the patient, the organization of plans for the periodic payment of medical and hospital costs must be under the control of the medical profession. The medical profession must act in concert with the hospitals and such other allied services as may be involved in the individual project, together with a group of citizens representative of the whole community and of industry who are interested in the successful operation of the plan.

"c. The principle of free choice of the physician and hospital by the patient must be assured to the end that the responsibility of the individual physician to the individual patient shall always be maintained. When hospitalization is required, this choice must of necessity be limited to the physicians and surgeons who hold appointments on the staffs of the hospitals participating in the plan or to those physicians and surgeons who are acceptable to the hospital. It is further recommended that only approved hospitals be admitted to participation in such a plan.

"d. The compensation of the physician and of the hospital should be estimated with due regard to the resources available in the periodic payment fund and should be based upon the specific services rendered.

"e. The organization and operation of any plan of this type must be free from any features not in accordance with the code of ethics of the medical profession which code has been established for the protection of the patient.

"f. The medical organization participating in such a plan must assume the responsibility for the quality of service rendered.

"9. Periodic prepayment plans for medical and hospital service should eliminate many of the conditions which have brought about the development of industrial contract practice. Until such plans have been more widely established certain general principles are here formulated with a view to the elimination of the commercial features of such forms of medical service.

"a. The Minimum Standard for Industrial Medicine and Traumatic Surgery of the American College of Surgeons should be accepted.

"b. Physicians and surgeons, qualified as in paragraph 2 of the above Minimum Standard, may properly be employed on a full-time or a part-time basis by industrial organizations to provide medical and surgical service for their employees, as follows:

"i. To provide emergency service and first aid in injury or disease, and to provide adequate medical or surgical care for industrial injuries and diseases. Medical and surgical care of the families of employees, and of employees themselves, except for emergency and industrial injuries and diseases, should be provided by the industrial physician only in remote districts where other adequate medical service is not available.

"ii. To provide preemployment and periodic physical examinations.

"iii. To study the hazards of the particular industry and to cooperate with other agencies in effecting such measures as may be needed for the prevention of injury and disease.

"iv. To keep accurate records such as may be required by local workmen's compensation laws, and so complete as to serve for scientific investigation of industrial hazards with a view to their further prevention. These records are privileged communications, subject always to due process of law.

"c. The sale of a contract by an industrial organization to an individual physician or group of physicians for medical and/or hospital service for its employees encourages commercial competition and is to be condemned.

"d. Unethical practices in publicity, advertising, solicitation, and competition, either of a professional or of a financial nature, must be eliminated.

"e. The accepted code of ethics of the medical profession, which is designed to protect the best interests of the patient, should apply to industrial medical service as to all other forms of medical practice."

By Mr. Kelleher:

Q.—Now, Dr. Crowell, I have just a few questions about this report. Will you refer to the first sentence of subparagraph a of paragraph 7, which reads:

"Periodic prepayment plans for medical service should be free from the intervention of commercial intermediary organizations operating for profit."?

I should like an answer to this question: Was it the intent of the Medical Service Board to recommend against the use, in a prepayment plan, of a nonprofit organization to handle the administrative and clerical matters of the plan?

A.—You say, Was there intent to recommend against it?

Q.—Yes.

A.—I would not so interpret this paragraph.

Q.—In other words, that paragraph is limited to the intervention of commercial intermediary organizations operating for profit?

A.—As I read it, sir.

Q.—Now, will you refer to that part of subsection d, which says that the compensation of the physician should be based upon the specific services rendered and tell us what is meant by that language as used by the board?

A.—That the payment to the physician who participates in this plan should be proportionate to the service that he actually rendered and that he should not derive benefit—financial benefit—merely on account of being on the staff of a hospital which happens to render this service, unless he personally renders it. That is my interpretation of it.

Q.—You were a member of the board?

A.—I was a member of the board, sir.

Q.—Was it intended by that language to prevent the doctor from accepting a salary for his services in such a plan, provided the salary was commensurate with the services rendered by the doctor?

A.—I am not of the opinion, sir, that that condition was specifically considered in the preparation of this paragraph.

Q.—Did the board make any statement of principle concerning the propriety of a doctor's associating himself with prepayment plans on a salary basis?

A.—Not to my recollection.

Q.—Why not?

A.—Because the board was concerning itself with a statement of principles and not details of any specific plans.

Q.—Did the board consider that the question of whether a doctor should be paid a salary was a matter of detail, depending upon the particular type of plan?

A.—I should say so.

Q.—Now, will you refer to paragraph 8 of the report and tell the jury what form of medical service is meant by the language in the last sentence of that paragraph, reading "such forms of medical service"?

Mr. Leahy:—On what page is that?

Mr. Kelleher:—It is on page 3, the first paragraph at the top of the page.

The Witness:—There is a sentence there with two "such's" in it. The first "such":

"Until such plans have been more widely established . . ."

That means a periodic prepayment plan for medical and hospital service. Then:

". . . the elimination of the commercial features of such forms of medical service."

I would say that refers to industrial contract practice.

AFTER RECESS, MONDAY, FEBRUARY 10

DR. BOWMAN C. CROWELL, DIRECT EVAMINATION —RESUMED

By Mr. Kelleher:

Q.—Dr. Crowell, I have only one other question. Will you refer to subparagraph C, under paragraph A to the report of the Medical Service Board, and tell us whether the Board intended by that paragraph to condemn prepayment plans in which doctors participated on a salary basis?

A.—My impression of that paragraph is that it refers only to industrial contract practice and not to prepayment plans in general.

Q.—Will you tell us whether any of the principles set forth in subparagraphs A to E, under paragraph 8, were intended to apply to prepayment plans?

A.—They were dealing with industrial medical practice, and not the general prepayment plans under consideration.

CROSS EXAMINATION OF DR. CROWELL

By Mr. Leahy:

Q.—Doctor, would you explain to the jury, please, what you mean by industrial medical practice?

A.—Medical practice that is provided by industries or industrial organizations to provide emergency service and first aid in injuries or disease, to provide adequate medical or surgical service for industrial injuries and diseases.

Q.—Has that been quite prevalent and common?

A.—Industrial medical practice?

Q.—Yes.

A.—Yes, sir.

Q.—Over how many years?

Mr. Kelleher:—I object, your Honor, because Mr. Leahy's question goes beyond the scope of the direct examination.

THE COURT:—I think I will sustain objection to the second question. The first one I think is proper in clearing up an understanding of what industrial practice is.

By Mr. Leahy:

Q.—Doctor, did you have under consideration when this report was drafted any particular group scheme?

A.—No, sir. I was one member of this board. Whether other members of the board had any particular plans under discussion I do not know.

Q.—Have you any memory now of any discussion when you were formulating this report about any particular group plan?

A.—No, sir.

Q.—Did you have the general subject of group plans under discussion?

A.—Naturally the general subject was under discussion, of group plans. As I interpret it, the whole report was based on that; not on specific plans.

Q.—Would you kindly take the report, Doctor, as you have it before you, and let us look at paragraph 3 on the same page. Do you catch it down there—the second line from the bottom?

A.—Yes, sir.

Q.—Take the second—well, I will read it so that you will understand my question (reading):

"Encouragement should be given to the trial of new methods of practice designed to meet these needs, and a careful evaluation of their success should be the duty of the medical profession before they are offered for general adoption."

What did you mean in there, that the "evaluation of their success should be the duty of the medical profession"?

A.—As I stated, in paragraph 2, preceding it, sir, the College believes it is the duty of the medical profession to take control of all measures and that the plans that were drawn up or that would be drawn up should be acceptable to the medical profession.

Q.—And it was the medical profession which constituted those people in the community who were capable of evaluating the success of these plans?

Mr. Lewin:—We object, if your Honor please, on the ground that the question goes beyond the scope of the direct examination.

THE COURT:—Can you repeat it, Mr. Leahy?

Mr. Leahy:—I can repeat it, yes, your Honor. I will reframe the question.

By Mr. Leahy:

Q.—Was it the thought contained in this paragraph that the medical profession was the profession, and the doctors were the people, who could evaluate the success of such plans?

Mr. Lewin:—Another objection, your Honor. The paragraph speaks for itself without ambiguity.

Mr. Leahy:—We had the same point up on direct and the question was asked as to what was the intent.

THE COURT:—Objection overruled.

The Witness:—That means I may answer it?

THE COURT:—Yes; you may answer it.

A.—It was felt that the medical profession were the arbitrators as to the success of these plans.

By Mr. Leahy:

Q.—The next sentence reads that this new method of practice must be conducted strictly in accordance with the accepted code of ethics of the medical profession. What code of ethics is referred to there?

A.—The code of ethics that is accepted by the medical profession in places where these plans are in force.

Q.—Is there, Doctor, any code of ethics which is published for the medical profession other than the code of ethics of the American Medical Association?

A.—I made my reply as I did, sir, inasmuch as I have referred to the fact that our organization is an international one, and in the United States of America the code of ethics and the principles of ethics of the medical profession evolved by the American Medical Association I would say were generally accepted.

Q.—The sentence further proceeds to state that these methods must be conducted strictly in accordance with those ethics, in order that the interests of the patient and of the community may be protected. What do you mean by that?

Mr. Lewin:—I think it speaks for itself.

THE COURT:—I do, too, Mr. Lewin. I think the whole article speaks pretty well for itself; but you have set the pace here.

Mr. Lewin:—No, your Honor. Where there was ambiguity we asked him to clear up the ambiguity. I thought that was perfectly proper practice. But here he is referring to something as to which there can be no argument about its meaning.

Mr. Leahy:—I did not see any ambiguity about it.

Mr. Lewin:—You should have objected, then.

Mr. Leahy:—I do not want to object to anything you want to bring out.

Mr. Lewin:—Let us see if you stick to that throughout this case.

THE COURT:—I am afraid, gentlemen, that I shall have to be the judge of that. You may answer the question. After all, we have some understanding of the English language. I mean, it does not take a doctor or lawyer to have a reasonable understanding of the English language; and when you read perfectly plain, simple words laid down in a grammatical way, we ought to be able to judge what it means.

Mr. Leahy:—I will reframe the question, your Honor, to bring out the thought.

By Mr. Leahy:

Q.—Was it not the intent of that sentence, Doctor, that any method of practice which was being conducted contrary to the code of ethics of the medical profession would not be conducted in the interests of the patient and of the community?

Mr. Lewin:—We make the same objection, your Honor.

THE COURT:—I have already permitted him to answer it. It is difficult to draw a line. When you conduct a line of examination it is pretty hard to restrict the cross examination.

Mr. Lewin:—Yes, your Honor, but—

THE COURT:—We will not argue it any further.

The Witness:—I would prefer answering that in the positive; that is, that if conducted in accordance with the accepted code of ethics of the profession, it was felt that that would safeguard the interests of the patient and the community.

By Mr. Leahy:

Q.—Now, will you go to Section 4? You refer there to the fact that adequate medical service should be made for the uneducated and credulous members of the community. To whom were you referring when you said the credulous members, and what does that mean?

Mr. Lewin:—We object to that, on the same ground, that "credulous" is a perfectly good English word.

THE COURT:—Objection overruled.

A.—I don't believe I can elucidate that any more than the word itself.

By Mr. Leahy:

Q.—Does it refer to those members of the community who might be easily misled by advertising claims for service which will be rendered to them?

A.—I think those are included under that phrase.

Q.—Those who easily believe representations as to what they will get for what they will pay?

A.—Exactly.

Q.—Does it not take into consideration also the fact that the ordinary layman or member of the public is himself unable to judge of the character or quality of medical service which he will get from an advertiser or solicitor?

Mr. Lewin:—There is nothing on the direct that went into that, and this witness has not been qualified as an expert on psychology or anything of that sort.

THE COURT:—Objection overruled. Answer the question, Doctor.

A.—I would not say that the public as a whole were not competent to choose their own medical care.

By Mr. Leahy:

Q.—Would you say that there were a sufficient number of the public such that you would classify them as the uneducated and credulous who must be protected against such representations?

A.—There is that element in the community; otherwise it would not have been referred to.

Q.—Do you recall that your group or your board studied that matter before this report was made up?

A.—It was known to the members of the board that in some of the industrial communities the type of people were of such a level that they had difficulty in using judgment as to the selection of those who should care for them from a medical standpoint.

Q.—Do you refer to the same people in the sixth paragraph where again you repeat that the College should work in cooperation with other medical groups in order to dispel the ignorance and credulity of the public?

A.—Yes, sir.

Q.—When you state in paragraph 7 of the report that your College recognizes that the periodic prepayment plan provided for the costs of medical care of illness and injury to individuals in families of small means offers a reasonable expectation of providing them with more effective methods of securing adequate medical service, you refer, do you not, to such a periodic prepayment plan as being conducted in accordance with the accepted code of ethics of the medical profession?

A.—Yes, sir.

Q.—Now, will you turn to page 2. Do you recall what your committee had in mind in making the statement in this report—

"The varying restrictions imposed by present insurance laws in different states further complicate the problem."

That is the last sentence of the first paragraph.

A.—I cannot state with authority as to that phrase, but the insurance laws of the states differ, I am informed, and arrangements for prepayment plans that are made must conform to the laws of the states in which they are promulgated.

Q.—But you do not recall now any particular insurance laws that were discussed in the committee?

A.—No, sir.

Q.—Pass on, then, to subparagraph B on page 2:

"In the interest of the patient the organization of plans for the periodic payment of medical and hospital costs must be under the control of the medical profession."

What does that intend?

A.—It intended to obviate the prepayment plans being put under the guidance of commercial organizations.

Q.—You mean, commercial organizations of laymen?

A.—Yes, sir.

Q.—In other words, was it the intent of the recommendation of your board when it made its report to the Academy that the medical profession should be the profession which controlled these plans?

A.—Yes, sir.

Q.—Going down to the last sentence of paragraph C, what did your committee intend by writing into that paragraph:

"It is further intended that only approved hospitals be admitted to participation in such a plan"?

A.—It was intentionally written as "approved hospitals" without stating what the approving body would be. We are an international organization.

Q.—By the way: what countries are included? Let us get that clear, please.

A.—It was founded by the surgeons of the United States and Canada, but there are also Fellows in many other different parts of the world—in Mexico, in many of the South American countries, Cuba, Puerto Rico, England, Scotland, Wales; others in India, China, and so on.

Q.—Therefore, what you intended was to leave whatever approving board or organization there might be in each of the various countries to give its approval?

A.—Yes, sir.

Q.—Coming down to the United States, what were the approved hospitals, or what was the body which approved in the United States?

A.—It is not stated, sir.

Q.—What did you intend?

A.—It was intentionally, I would say, left vague. It was not desired to make the American College of Surgeons itself—not intended to place that College in the position of being the sole approving body.

Q.—Was there any other approving body at the time, in 1933 or 1934, when you made this report?

A.—Yes; the American Medical Association.

Q.—Was there any other association, other than the American Medical Association, besides your own which approved hospitals?

A.—Not to my knowledge. The American Hospital Association is an organization of itself, but I believe membership in it is on a different basis from that of either the American Medical Association or the American College of Surgeons.

Q.—Doctor, would it then be correct to state that in so far as that particular sentence affected hospitals of the United States when it used the adjective "approved" it meant only hospitals approved either by your Academy or by the American Medical Association?

A.—I think that is the logical interpretation.

Q.—Let us pass to subparagraph B on the same page:

"The organization and operation of any plan of this type must be free from any features not in accordance with the code of ethics of the medical profession."

Did you there refer to the same code you had referred to earlier in your report, to wit, the code of ethics of the American Medical Association?

A.—Yes, sir.

Q.—Just one question on F:

"The medical organization participating in such a plan must assume the responsibility for the quality of service rendered."

What does that refer to, Doctor, when it says that the medical organizations must assume the responsibility for the quality of service rendered?

A.—My interpretation of that, sir—and this is a strictly personal interpretation—would be that it was assumed from what has gone before that there will be medical organizations which will organize these prepayment plans, and those medical organizations are responsible for seeing that the plans work in conformity with the ideals and assume responsibility for the quality of service rendered.

Q.—It was not intended in that recommendation that you made to the Academy to recommend that any lay group, lay board of trustees or lay board of directors should assume the responsibility for the quality of service rendered, was it?

A.—I do not see that that was stated here anywhere.

Q.—Would such an inference, in your judgment, be contained in paragraph F?

A.—It would seem to me that that is obvious, sir.

Q.—In other words, it was the medcal profession which should take charge of the quality of service; is that right?

A.—As I see it, sir.

Q.—O. K. Now, let us go to page 3 of the second column, paragraph C.

"The sale of a contract by an industrial organization to an individual physician or group of physicians for medical and/or hospital service for its employees encourages commercial competition and is to be condemned."

What does it mean by selling contracts by an industrial organization to an individual physician, Doctor?

A.—That is where they are engaging in industrial practice under their contract to provide complete medical and hospital care.

Q.—By an individual physician?

A.—Yes.

Q.—What does it mean where it says "encourages commercial competition"?

A.—One doctor might underbid another in order to get the contract for the care of those in the industry.

Q.—You consider that any such practice as that is not in accordance with the public interest, do you not, Doctor?

A.—It says here that the board considered it something to be condemned.

Q.—Take paragraph D:

"Unethical practices in publicity, advertising, solicitation, and competition, either of a professional or of a financial nature, must be eliminated."

What practices were you referring to there? Did you have some in mind in the board as you sat around and drafted that paragraph?

A.—Only those referred to. It seems to me that is obvious, sir—unethical practices, unethical advertising, unethical solicitation, unethical competition.

Q.—Either of a professional or of a financial nature?

A.—Yes.

Q.—Do you recall now, or have you any independent recollection of, Doctor, any discussions which were had in the board before that paragraph was drafted?

A.—I have no recollection of any details of it, sir. You will gather from a reading of the whole document that the board had permanently in mind observing the ethics of the medical profession; and this is just one other phase of it.

Q.—And that is why you wanted that paragraph E, is it?—

"The accepted code of ethics of the medical profession, which is designed to protect the best interests of the patient, should apply to industrial medical service as to all other forms of medical practice."

A.—Yes, sir.

Q.—The same code of ethics you had in mind before?

A.—Yes.

Q.—Doctor, could you tell us how much care was spent by your board in the preparation of this report to the Board of Regents?

A.—As stated here, the board was appointed in July, 1933, and rendered its report in June, 1934.

Q.—For practically a year, then, you had the matters and things about which you reported under discussion and deliberation?

A.—Yes, sir.

Q.—And were the doctors who composed the board, Robert B. Greenough, yourself, Dr. Agnew of Toronto, Dr. Dukes of Oakland, Dr. Martin of Chicago, Dr. Miller of New Orleans, Dr. Pool of New York, Dr. Shipley of Baltimore, Dr. Squier of New York and Dr. White of Minneapolis—were they surgeons of long experience and standing?

THE COURT:—He has already answered that. He gave a list of four of them who were not. It is in the record. He himself is not a surgeon.

Mr. Lewin:—He is a pathologist.

By Mr. Leahy:

Q.—Were they doctors of standing, then, and of long experience?

A.—They are doctors; yes.

Q.—By the way: Are the members of the college to which you belong also members of the American Medical Association?

A.—The American College of Surgeons. Not all, sir. It is an international organization.

Q.—Those in the United States are members of the American Medical Association also, are they?

A.—There may be a few exceptions to that, sir.

Q.—But the majority are, are they?

A.—Yes.

Q.—Now, Doctor, on direct examination you spoke about the approval of hospitals, I think. Your organization does inspect and approve hospitals, does it not?

A.—Yes.

Q.—How long has it been doing that?

A.—Since 1918.

Q.—What is the purpose of the inspection?

A.—To elevate the general standard of the practice of surgery, to improve care for the patients, to improve the conditions in the hospital where the doctors have to do the work, so that they may be in position to render medical care to the patients.

Q.—How frequently does the organization inspect hospitals?

A.—It is a continuous process, sir. There is no stated interval in which an individual hospital will be inspected.

Q.—In other words, does the hospital know in advance that it is going to be inspected?

A.—Yes, sir.

Q.—But the time depends on the convenience or the opportunity which your particular inspectors may have to make the examination?

A.—Yes, sir.

Q.—Would you say it is as frequently as a year or two years or three years, or how long?

A.—Certainly not all hospitals are visited every year. There is some communication with all hospitals each year. There are hospitals which not only conform to our standards, but their practice is far above our minimum standards, and it is not necessary to visit them at frequent intervals. It is the hospitals that need the help, or that we feel need the help, of the college that are visited at most frequent intervals.

Q.—Could you tell the jury about how many hospitals there are in the United States?

Mr. Lewin:—Your Honor, may I say something?

THE COURT:—Yes.

Mr. Lewin:—Intrinsically we have no objection to this, but it violates the rules of cross examination. Mr. Leahy is going to have an opportunity to present his case and call this witness as his witness. This has all been put into the record.

THE COURT:—I will sustain the objection to that question. Am I in error in my recollection that on direct examination you went into the fact that they approved hospitals?

Mr. Kelleher:—That is correct, your Honor.

Mr. Leahy:—I think I have a right to exhaust it, then.

Mr. Kelleher:—We went into the question of approval, but he has asked this witness how many hospitals there are in the United States.

Mr. Leahy:—I was just trying to follow the question, when he said they obviously could not examine every hospital every year.

Mr. Lewin:—It is not very important, but we could go on forever if we followed that practice.

I will withdraw my objection. Go ahead. I am awfully sorry.

Mr. Leahy:—Shall I proceed, or does your Honor——

THE COURT:—I have sustained the objection.

By Mr. Leahy:

Q.—In the approval of hospitals, Doctor, by your organization, is there any grading made of the hospital or classification made, such as an A hospital or B hospital?

A.—Not so designated, sir. The hospital is either approved or professionally approved. Professional approval means that in some respect they did not quite come up to our standards but they have given evidence that they are seeking to do so.

Q.—Then do you publish a report on those approved hospitals?

A.—We publish a list each year, sir.

Q.—I will show you a volume and just ask you whether you can identify that as one of your lists?

A.—It is.

Q.—Is that indicative of the lists that are published each year?

A.—Similar lists are published each year; yes, sir.

Mr. Leahy:—May that be marked for identification?

THE COURT:—Yes.

(List of hospitals identified by the witness was marked Defendants' Exhibit Crowell, Cross Examination, No. 1, for identification.)

By Mr. Leahy:

Q.—Doctor, with reference to your membership, is your membership scattered pretty widely throughout the United States?

A.—Yes.

Q.—Is each locality or area in the country represented? Does your membership go to the Far West, Middle West, South, East, and North?

A.—All parts.

Q.—I noticed you answered a question this morning on direct as to the qualifications of a Fellow in your college. Did you state that the minimum requirement is to admit a member after seven years?

A.—Seven years after graduation.

Q.—Do you admit on application where an applicant has been practicing for seven years since his graduation?

A.—If he has the other qualifications.

Q.—Then there must be additional qualifications, must there not, to the time of practice?

A.—Decidedly.

Q.—And you make a very close investigation into the man, do you not?

A.—Yes.

Q.—Into his qualifications?

A.—Yes, sir. By me, you mean the organization?

Q.—I mean the organization. Does the applicant usually submit references or sponsors when he makes his application?

A.—He does.

Q.—Are those contacted?

A.—They are communicated with.

Q.—And you try to find out as much as you can, do you not, to see that the man is qualified beyond the number of years he has practiced since his graduation?

A.—Yes.

Q.—Do moral qualifications enter into it?

A.—Ethical.

Q.—Ethical qualifications enter into it?

A.—Yes.

Q.—You were asked the question, I think, upon direct this morning, Doctor, whether or not you had any requirement that the members on the staff of the hospitals which your organization approves should be members of your organization. Do you recall that question?

A.—Yes.

Q.—Of course you have no such requirement, have you?

A.—No, sir.

Q.—Because you are an international organization, are you not?

A.—Yes.

Q.—And it is restricted purely to surgeons, is it not?

A.—Fellowship in the College?

Q.—Yes.

A.—Yes, sir.

Q.—And upon the staff of any hospital there are others than surgeons, of course, are there not?

A.—Yes.

Q.—Therefore you could not require, could you, under the rules of your organization, that the staffs of hospitals be composed only of surgeons?

A.—No, sir.

Q.—Do you have any requirement at all that the surgeons on the staff should be members of the county associations here in the United States?

A.—Not so stated, sir.

Q.—How would you put it? You put it for me.

A.—They should be practitioners of medicine, licensed to practice medicine in their respective communities, in good standing.

Q.—Do you recommend that the members of your association or that the staffs of surgeons in the hospitals be composed of members of your Society or College?

A.—Will you restate that, please?

Q.—I say, do you attempt to recommend to the various hospitals that in the selection of surgeons to the staffs of those hospitals they select from the accepted membership or Fellowship of your College? I mean, in the United States.

A.—I would say no. The College at no time, that I know of, has recommended directly the personnel of any hospital. We expect the hospitals to conform to our standards. We do not dictate personnel.

Q.—Where you find a surgeon on the staff of a hospital who is not a Fellow of the College, with respect to him what are your minimum standards?

A.—We deal with the hospital as a whole rather than with the individual members of its staff, sir.

Q.—In the approval of various hospitals do you take into consideration the personnel of the staff at all?

A.—The accomplishment of the hospital as a whole.

Q.—Do you consider the staff members at all?

A.—We do have a list of the staff members.

Q.—Do you make any investigation of them as to their ability or their qualifications before you approve a hospital?

A.—I would say, rarely.

Q.—You accept them, do you, as they are on the staff?

A.—I am afraid I am getting a little deeper into this than I am qualified to answer.

Q.—Then I will not ask you any further questions.

A.—I am not directly in the hospital department of the College.

RE-DIRECT EXAMINATION

By Mr. Kelleher:

Q.—In your knowledge has any surgeon been excluded or expelled from membership in the American College of Surgeons for participation in a prepayment plan?

A.—Not to my knowledge.

Q.—Has the American College of Surgeons ever threatened to withdraw its approval of a hospital because the members of the staff of the hospital were engaged in a prepayment plan, to your knowledge?

A.—Not to my knowledge.

Q.—Has the American College of Surgeons ever withdrawn approval of a hospital because of the participation of the staff of the hospital in a prepayment plan?

A.—Not to my knowledge.

RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—You would, however, would you not, threaten to withdraw the approval if there were members on the staff of the hospital engaged in unethical practices?

A.—If it came to our knowledge.

Mr. Leahy:—Yes. That is all.

Mr. Kelleher:—We now offer in evidence certain excerpts from "Proceedings of the House of Delegates of the American Medical Association, June 11th to 15th, 1934." The volume containing the proceedings falls within Exhibit 2, which is the stipulation.

THE COURT:—Do you wish to read it?

Mr. Kelleher:—I have indicated the parts which we intend to offer by slips and by pencil notations in the volume. I suppose I had better show it to defendants' counsel.

Mr. Kelleher:—May I state for the record that the Government is offering in evidence portions of the proceedings of the House of Delegates, in 1934, appearing on pages 42, under the heading, "Resolution on the Apparent Attempt of the Board of Regents of the American College of Surgeons to Dominate and Control Medical Practice," and the portion of the proceedings appearing on page 49, under the heading, "Report of the Judicial Council"?

THE COURT:—That is the one I passed on?

Mr. Kelleher:—That is the one you passed on, yes.

Dr. George Edward Follansbee presented the following report:

"A resolution introduced by Drs. Charles J. Whalen, Illinois, calls attention to a recent action by the Medical Service Board of the American College of Surgeons, approved by its board of regents, advocating publicizing a procedure for furnishing medical and hospital care for certain classes of the population. No consideration appears to have been given to policies or procedure previously adopted by the American Medical Association, of which the College of Surgeons are members. The American Medical Association is the one organization representing the entire body of physicians constituting the medical profession, and by virtue of that fact is the only organization qualified to speak for the varying interests and policies of the profession as a whole.

"Recurring proposals concerning the entire practice of medicine from small sections of the profession, without due regard to the policies of the entire profession, as represented by the American Medical Association, when presented to the public through other channels than the representative body are confusing to the public mind, are harmful to the profession, and give aid and assistance to those bodies and individuals who are attempting to revolutionize medical practice. The Judicial Council therefore recommends the adoption of the resolution as follows:

"WHEREAS, The American Medical Association, including 100,000 members, is the only democratic body representing the organized profession of this country through delegates regularly elected through county and state medical societies; and

"WHEREAS, Other medical organizations and groups representing selected groups of specialists who have from time to time issued pronouncements of policies in the field of medical economics and medical practice, which do not represent the views of organized medicine and which purport to guide the medical profession and the public in the administration of medical affairs; and

"WHEREAS, The House of Delegates of the American Medical Association has repeatedly condemned the issuing of said announcements on policies which seriously embarrass the attempts of this organization to secure adequate care for the health of the American people and to protect the ideals of the medical profession; and

"WHEREAS, The Board of Regents of the American College of Surgeons assembled in Chicago on June 10 promulgated a policy, including a prepayment plan for medical care, restricting so-called private hospitals to the members of the staffs of such hospitals, and to physicians acceptable to such staffs; and

WHEREAS, This action of the Board of Regents has been spread to the people of the United States through the public press on the opening day of the annual session of this House of Delegates: Now, Therefore, Be it

Resolved, That the House of Delegates of the American Medical Association expresses its condemnation of such practice and of this apparent attempt by the Board of Regents of the College of Surgeons to dominate and control the nature of medical care and practice; and be it further resolved that the House of Delegates requests the board of trustees of the American Medical Association and the judicial council to ask the Board of Regents of the American College of Surgeons, who are themselves members of this American Medical Association, to explain the reason for their action and to justify the attempt of a small group within a specialistic organization to legislate for all the medical profession in this country, truly represented only by the American Medical Association."

"The report of the Judicial Council was adopted on motion of Dr. C. E. Humiston, Illinois, seconded by Dr. Albert Soiland, Section on Radiology, and carried unanimously."

TESTIMONY OF RAYMOND R. ZIMMERMAN

DIRECT EXAMINATION

Raymond R. Zimmerman said in answer to questions that he is employed by the Council of Personnel Administration here in Washington.

The Council is a division of the United States Civil Service Commission. It is made up of the directors of personnel of the various departments and agencies of the Federal Government. It concerns itself with the personnel problems; the human problems of the Government. He has been with the Council since August 1939. During 1936, 1937 and 1938 he was director of personnel of the Federal Home Loan Bank Board, connected with the Home Owners Loan Corporation, as director of personnel of the Federal Loan Bank Board.

The personnel department concerns itself with problems, questions of employments, wages, promotion; questions of training, questions of policy, questions of employment policy; labor policy, questions of working conditions, questions of employee health—the human problems of the organization. Before that he was in charge of personnel matters for the Continental Oil Company in Oklahoma.

He obtained his present post with the Government in the Council on Personnel Administration through appointment by the Chairman of the Council, which is under the Civil Service Commission. He described his training and qualifications in such work.

THE H.O.L.C.

Q.—I wonder if you could tell us now just generally what the Home Owners Loan Corporation is.

A.—Well, the Home Owners Loan Corporation is an independent instrumentality of the Federal Government. It was created by Act of Congress in 1933. And it was organized—it was set up, created, for the purpose of refinancing distressed home loans.

Q.—How was it financed?

A.—The initial stock contribution I think was supplied by the Federal Reserve—no, by the R. F. C., Reconstruction Finance Corporation.

Q.—Reconstruction Finance Corporation?

A.—That's right. The original capital was $200,000,000. That was the initial capital.

Q.—And did it raise additional monies by the issuance of bonds?

A.—Oh, yes.

THE COURT:—I don't think you need to go into any detail on that.

Mr. Lewin:—Not much more than that. A little bit more.

THE COURT:—Very well.

Mr. Lewin:—Your Honor, I think everybody might be interested to know who held the bonds. I think the other side might want to make some point of that, I don't know.

By Mr. Lewin:

Q.—Do you know who bought the bonds of the H. O. L. C.?

A.—The bonds were sold to the public.

Q.—Now, just describe briefly again the nature of the business of the H. O. L. C. What does it do?

A.—It was engaged, as I say, in refinancing distressed home loans.

Q.—Does it lend money and acquire mortgages?

A.—Yes.

Q.—Charge interest on those loans?

A.—That's right. That's right. The revenues of the Home Owners Loan Corporation come from the interest charged on these mortgages, these home mortgages.

Q.—Is it self-sustaining financially? Does it earn its expense money?

A.—Yes. Entirely.

Q.—Entirely?

A.—In other words, it is not supported by taxation; no funds appropriated.

Q.—In 1937 and 1938 were its expenses taken out of money appropriated by Congress or taken out of its earnings?

A.—Taken out of earnings entirely.

Q.—I see. Can you tell us whether or not through 1937 and the early part of 1938 it was under the jurisdiction of the Comptroller General or the General Accounting Office as to its expenditures?

A.—I think it went under the—

Mr. Leahy:—Isn't that a question of law, if your Honor please?

THE COURT:—Of course it is.

Mr. Lewin:—It is a question of fact also.

THE COURT:—He might state it but let us not go into it.

Mr. Leahy:—May I just state this, if your Honor please, if it is or if it isn't, whatever it is, it is under some law, and that law is the best evidence.

THE COURT:—If you are serious about the objection, I will sustain it.

Mr. Lewin:—All right.

By Mr. Lewin:

Q.—About how many employees did the Home Owners Loan Corporation have in 1937?

A.—Well, it varied during the year.

Mr. Leahy:—All over the United States, you mean, Mr. Lewin?

Mr. Lewin:—That is what I asked first but I am going to come down to Washington in a moment.

By Mr. Lewin:

Q.—Do you know what the total number of its average employees was in 1937?

A.—It was between 15,000 and 16,000, in that neighborhood. It varied from month to month. Home Owners Loan Corporation is a liquidating organization. Its staff is decreasing.

Q.—Yes. About how many of those employees in 1937 were working here in Washington?

A.—About, between 1,300 and 1,400. There were more than that on the home office payroll but one division was located in regional offices, although it was carried on the payroll of the Washington office, the auditing department.

Q.—Now, have you ever interested yourself as a personnel man throughout the period of your experience in reducing the expenses of your employer which result from accidents to the employees?

A.—Yes. That was a responsible part of my work with the oil company. Its safety work is an important part of the job in a business that is hazardous.

Q.—Yes. Were the H. O. L. C. employees in 1937 and 1938 and 1936 subject to any Civil Service requirements?

Mr. Leahy:—Will you read that question?

(The pending question, as above recorded, was read by the reporter.)

By Mr. Lewin:

Q.—Or regulations?

Mr. Leahy:—Isn't that a question of law also, if your Honor please?

THE COURT:—Yes, sir, but maybe he can advise the Court about it. The Court doesn't know.

The Witness:—Am I to answer it?

By Mr. Lewin:

Q.—The Court is going to permit you to answer it, yes.

A.—Yes. Rules and regulations governing federal workers; hours of work; rates of pay; hours of leave; sick leave and annual leave; regulations of that sort, the employees of the Home Owners Loan Corporation were.

Q.—What is sick leave for a government worker or for a worker of the H. O. L. C.?

A.—Well, it is—it is a period of—time is given with pay to the employee who actually—who is ill and cannot work, up to 15 days a year; and we speak of it as a sick leave.

Q.—About how much sick leave is a government worker entitled to?

Mr. Leahy:—He stated fifteen days.

THE COURT:—He stated it.

Mr. Lewin:—I didn't hear that.

The Witness:—Fifteen days is the maximum that they are entitled to in a year. However, that leave is cumulative.

By Mr. Lewin:

Q.—But of course he has to be sick, I presume, before he is entitled to the sick leave?

A.—That's right. And he must certify that he is sick.

Q.—Did you make any studies for a Federal Home Loan Bank Board of the losses to the business by reason of the amount of sick leave taken by the employees?

A.—Yes, sir. As a part of record keeping, regular record keeping, we kept track of the amount of time lost through sickness, and we interpreted those costs to the management of the organization.

Q.—Was that work done under your direction?

A.—It was.

Q.—Had you before that time studied the whole problem of the cost to an employer in business of the amount of sick leave that his employees take?

A.—Well, I was, and am generally familiar with the amount of sick leave that is taken by employees in private industry. Is that your question?

Q.—Yes. Are there studies of that question that have been prepared by employers?

A.—I think most private employers keep pretty accurate records of their costs.

Q.—Had you any access to the study made by the American College of Surgeons on that question?

A.—Yes. I read—didn't make a careful study of it, but I know that it made the observation that there was—

Mr. Leahy:—I object. The best evidence is the report.

THE COURT:—Objection sustained.

Mr. Lewin:—I just asked wheth · he was familiar with that study.

THE COURT:—I think he has answered the question.

By Mr. Lewin:

Q.—Were you familiar with the studies of Westinghouse on that subject?

A.—Yes, sir.

Q.—When was that study made, was it 1937?

A.—'36.

Q.—'36?

A.—It was over a period of years, but they released their figures in '36.

Q.—Did you at my request look at your records to ascertain the average number of H. O. L. C. employees working here in Washington through the three months period October, November, and December of 1936?

A.—Yes, I did. Some time ago.

Q.—Yes. Now, can you tell me what that average figure was?

A.—No, sir—

Mr. Leahy:—I object. The record is the best evidence.

Mr. Lewin:—Well, now, your Honor, this is a well-recognized exception. These records are extremely voluminous. I am perfectly willing to have my brother have full access and he can count the number of employees and make his own computation.

THE COURT:—If it is a matter that is not in printed form in the nature of some official report, I think it necessarily involves calculations, summations, and I think the witness, if he has himself engaged in that, can state it, can state the results he has found, from authentic records.

Mr. Leahy:—Would your Honor kindly ask if he has done that personally?

THE COURT:—I think he said he had, Mr. Leahy.

By Mr. Leahy:

Q.—Did you do this personally, Mr. Zimmerman, make this investigation and the study of the records, or did somebody else do it and report to you?

A.—I didn't post the leave cards.

Q.—Did you examine the leave cards and make this compilation in order to talk about it now, yourself, or did you have somebody else do it and report to you?

A.—It was done under my supervision. The leave clerks posted the records and made summarization of it for me.

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Q.—Then you are taking somebody else's summarization?

A.—Yes. Regular monthly reports.

Mr. Lewin:—He said he had this study made under his direction; which is very usual to have his clerks do it. He couldn't do it all himself.

Mr. Leahy:—If your Honor please, it all depends on how we use this word "supervision." It is a great big question.

It is one thing to say in a section "I want this thing done," and it is another thing to supervise the doing of it to see how it is done.

As I understand it, he has nothing to do with it excepting he told the clerk or two clerks to go ahead and make the compilation; if the two clerks made the examination they ought to be here to tell us about it. I object to the testimony from this witness.

By Mr. Lewin:

Q.—Were these records taken from records kept under your supervision?

A.—Yes, sir.

Q.—Did you designate the employees who were actually to make the postings?

A.—Yes, sir.

Q.—Did you tell them what they should do and to what records they should look for the information?

A.—No. I think they knew that.

Q.—Did you tell them what period of time you wanted them to make the study of?

A.—Yes.

Mr. Lewin:—Your Honor, I submit there is no question but that is admissible.

Mr. Leahy:—I think he has just taken what he assumed some other clerks knew; he doesn't know what the records are, he just made a blanket assumption that they knew some records and brought back some things.

The Witness:—These records are audited.

THE COURT:—There seems to be a reasonable way to get at it. You have to accord the party the right of cross-examination and, if Mr. Zimmerman himself didn't do the work but is presented here as a witness to give the result, it denies the other side the right of cross-examination as to how the work was done and as to the accuracy of it.

That is the objection to it, as I see it.

Mr. Lewin:—It falls under a very well recognized exception of complicated voluminous records.

THE COURT:—Yes, with the results given by the ones who did the work.

You see, otherwise the defendants here don't have, for instance, the right, of course, which the law gives them of cross-examination to test the accuracy of that work.

Mr. Lewin:—Well, we are perfectly willing to have counsel go with us down to the H. O. L. C. to give us the books and let them sit down there and make these computations themselves.

THE COURT:—I will say this to counsel in order that it may be helpful in determining their final position about it, I am inclined to think that the information we want, properly presented here in evidence, is admissible, but the question is whether you want to go to these original sources for it, take the time for it.

Mr. Leahy:—I think your Honor indicated the positive rule of law on the question when you stated to counsel that when it was attempted in any case to prove records of this character, it was the one who made the compilation itself who was there on the stand, not someone else who received it.

I don't wish to be technical, it is the last thing in the world I want to do besides going down there and looking at the records. I am not going to do that. But, if your Honor please, I don't know what records were studied. He said "I assumed the clerks knew the records." I don't know how they were kept or anything about it and I would like to know that.

THE COURT:—I put this merely by way of suggestion, if counsel would rather step to the bench I will make my suggestion up here. Please step up here.

Mr. Lewin:—I will restate the question.

By Mr. Lewin:

Q.—Mr. Zimmerman, do you know the average number of the employees in Washington of the H. O. L. C. during the calendar months October, November, and December of 1936?

A.—Not from memory.

Q.—Could your memory be refreshed by showing you the memorandum that you made of it?

A.—Yes, sir.

Q.—Did you make this memorandum, or have it made? (indicating.)

A.—Yes, sir (examining paper).

Q.—Who physically made this compilation? I suppose the stenographer wrote it down, but who prepared it?

THE COURT:—He has already stated the actual work was done by certain clerks or subordinates that he designated for that work.

I think that is answered, Mr. Lewin.

Mr. Lewin:—My brother here had some further question about it.

Mr. Leahy:—It is only this, that it is rather difficult to refresh one's recollection when one never had the recollecton to be refreshed.

THE COURT:—I understand this is the result of that examination that he directed.

By Mr. Lewin:

Q.—Refer to that paper and answer the question.

THE COURT:—You may offer the paper yourself if you wish. We will receive the paper if he identifies that as the correct figure.

The Witness:—The average number of employees in the home office in Washington the last three months of 1936 was 1,534. That is exclusive of 477 that were working in the field but on the Washington office.

By Mr. Lewin:

Q.—So that if you took this 400 and some, how many does that leave you as the average you had working in Washington?

A.—The total number on the payroll was 2,011, less 477, leaves a net of actual employees working in Washington of 1,534.

Q.—Now, can you give us similar testimony for the year 1937?

A.—It is here (examining paper); total number of the payroll for this three months, 1,768. Working in the field, 428. It left actually employed 1,340. 1,340. 1,534.

Q.—Mr. Zimmerman, can you give us the average for the 12 months, 1937?

Mr. Leahy:—Is that for the whole year?

Mr. Lewin:—Yes.

The Witness:—Average for the year 1937 was 1,405, actually employed in the home office.

By Mr. Lewin:

Q.—Have you had studies made under your direction upon which you could make reports each month to the Federal Home Loan Bank Board as to the amount of sick leave that was being taken by the employees, and the amount that that sick leave cost the corporation in dollars and cents?

A.—That was a regular monthly report that went to the management.

Q.—I see. I hand you what purports to be such reports and ask you whether they are true copies of the reports that were submitted each month to the Federal Home Loan Bank Board.

A.—These are copies of the monthly report that went forward, summarizing the lost time from sickness.

Q.—Yes. Now, did you make studies to show what the losses were on the average in those last three months of 1936?

A.—We did.

Q.—Will you tell the jury what those losses were in dollars?

Mr. Leahy:—I object to that as being entirely immaterial and irrelevant, if your Honor please.

None of the issues in this case are broad enough to include testimony of that character.

Mr. Lewin:—Didn't you argue that to the jury?

Mr. Leahy:—I didn't argue it at all.

Mr. Lewin:—I beg your pardon. He argued to the jury that somebody had made a claim that the cost to the Home Owners Loan Corporation was $500,000. Do you remember those words?

Mr. Leahy:—I was answering what you said, when, if, and as.

Mr. Lewin:—And I have answered what you said by evidence.

THE COURT:—What is there in the indictment that is connected with that?

Mr. Lewin:—I will give it to you (examining papers). The allegations of the indictment to support this very well are those connected with Group Health Association, and which describe that corporation and its functions and its business.

THE COURT:—Well, read the particular one that relates to this question if you can find it.

Mr. Lewin:—There is no allegation in the indictment that the average number of employees of the Home Owners Loan Corporation was any amount.

THE COURT:—I hardly see the relevancy of it. Of course there were certain motivations that actuated the organization of Group Health, but what they are is unimportant and we will take a lot of unnecessary time if we got into it.

For the purposes of this trial we take Group Health to be a legal organization with the right to function along these lines of the prepayment group plan.

Now, that is all we are interested in. I am not going to extend this trial into any unnecessary features. We might just as well go back 130 years and find out what actuated the birth of the American Medical Association. We aren't concerned with that now.

Don't you see?

Mr. Lewin:—Yes, your Honor. I just don't want to be in the position after that opening statement of Mr. Leahy's—

THE COURT:—But you cannot try this case on the opening statement of Mr. Leahy. If you are going to, I will have to direct a verdict now, don't you see?

Mr. Lewin:—No, I don't, your Honor.

THE COURT:—That is one thing I think we had better wait for now. We are trying the case on the indictment now. The burden is on the Government to prove the indictment and we are going to keep reasonably within the limitations of that indictment.

Mr. Kelleher:—Is it your Honor's position that in showing the organization of Group Health we should not go into the financing of that Group Health?

THE COURT:—We are going into it only so far as it is reasonably necessary relative to this case. I am not going into all the details of any organization any further than is necessary to keep it a pertinent question here.

This case opens up so many avenues of inquiry that there has to be a limitation.

Mr. Lewin:—Your Honor, we feel we have absolutely nothing to conceal.

THE COURT:—There is nothing to conceal, so far as the aspects of Group Health are concerned, which I have stated, and we are not entering into any conjectures or suspicions one way or the other about it. We are simply going to keep within reasonable limitations here.

This indictment is your chart.

Now, let us go along with it.

I will sustain that objection.

Mr. Lewin:—All right.

By Mr. Lewin:

Q.—Did you have occasion to consider how this financial expense, whatever it might be, might be reduced on behalf of your employer?

Mr. Leahy:—I object to the question as immaterial.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Specifically, did you have occasion to consider an employee medical health plan?

A.—Yes, sir.

Q.—For the employees of the H. O. L. C. here in Washington?

A.—Yes, sir.

Q.—What study of such a subject did you make initially of yourself?

A.—Of Group Health practice?

Q.—Yes.

A.—Well, I first familiarized myself with—with the plan of the Standard Oil of Louisiana at Baton Rouge.

Dr. Adams, a medical director, described his plan to a group of us at the American Management Association in 1935. And it was there that I received first detailed information as to how the employees cooperative of this character could function in an organization.

He described to us that it was—

Mr. Leahy:—I object to what he described.

By Mr. Lewin:

Q.—Was he a doctor of medicine?

A.—He was.

Q.—What connection did he have with the Stanocola group you mentioned?

A.—He was the medical director of the Stanocola group plan.

Q.—Did the speech you heard him give deal with the subject of prepayment plans?

Mr. Leahy:—I object.

THE COURT:—Sustained.

By Mr. Lewin:

Q.—Did you have a conversation with Dr. Adams after you had heard his explanation?

A.—I did.

Q.—What was the subject matter of the conversation?

Mr. Leahy:—I object.

THE COURT:—Sustained.

By Mr. Lewin:

Q.—Why did you go up and have a talk with Dr. Adams after his speech?

Mr. Leahy:—I object, as being immaterial.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Did you make a trip down to inspect the Stanocola plan?

A.—I did.

Q.—Did you do that before Group Health Association was formed?

A.—I did.

Q.—About when did you go?

A.—In January 1937.

Q.—And how much time did you spend down there?

A.—Two days.

Q.—And just what did you do?

A.—Well, I inspected their plan from stem to stern.

Q.—Stem to stern.

A.—Visited—I talked first with the medical officers, the staff, visited the clinic, observed it in operation, talked with some of the patients, talked with the management of the company, the vice-president and general manager.

Q.—Of the Standard Oil Company of Louisiana?

A.—That's right. Went out into the refinery and talked with some of the supervisors, trying to make up my mind whether they had a good thing or not. I was looking it over.

Q.—Did you seek advice from the doctors who were on the staff of the Stanocola?

A.—Yes. We told them that we had a similar problem.

Mr. Leahy:—I object.

Mr. Lewin:—What is your Honor's ruling on that?

THE COURT:—It has been answered. I wouldn't attempt to get the results of the conversation, because, necessarily, that is just hearsay. I assume that is the basis of Mr. Leahy's objection.

Mr. Leahy:—Yes, but I think his objection is premature. I asked whether he was getting advice from these doctors on the subject of the medical plans and prepayment groups.

By Mr. Lewin:

Q.—What is your answer to that?

THE COURT:—He said he was.

By Mr. Lewin:

Q.—Can you name some of the doctors you discussed it with down there at the Stanocola?

A.—Dr. Irwin was their medical director. There was a Dr. Morris.

Q.—Did you meet Dr. Boyzet?

A.—Yes. Dr. Boyzelle, I believe it was.

Q.—How fully did you discuss it with these doctors? Don't tell us what you said, but how fully did you go into it?

A.—The size of their organization; their costs; their services; their dues to members; took a look at their budget; took a look at the physical equipment of their clinic. We asked all the—

Mr. Leahy:—I object.

THE COURT:—Yes. Don't tell the conversation.

By Mr. Lewin:

Q.—Did you go into the results of its operations?

A.—Yes.

Q.—How long had it been operating when you saw it?

A.—Oh, I was there in 1937. It was started in 1921.

Q.—What conclusion did you arrive at as a result of your inspection as to its results?

Mr. Leahy:—I object, as immaterial, if your Honor please, what his conclusion was.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Now, did you have occasion to meet a gentleman named Mr. R. V. Rickcord?

A.—Yes, sir.

Q.—When did you meet Mr. Rickcord and under what circumstances?

A.—It was in the early part of 1930, to my recollection.

Q.—Did he come to see you?

A.—He did.

Q.—Who was Mr. Rickcord?

A.—Mr. Rickcord was an employee of the Twentieth Century Fund?

Q.—Twentieth Century Fund. What is the Twentieth Century Fund?

A.—Or, the Good Will Fund. One of the two.

Q.—Are they affiliated, those two funds?

A.—Yes, they are. I understand they are.

Q.—What is the Twentieth Century Fund, and what is the Good Will Fund?

A.—The Twentieth Century Fund is a philanthropic institution, foundation. It was financed by the—by Mr. Filene, Boston merchant.

Q.—How is it governed?

A.—By a Board of Trustees.

Q.—Do you know the names of any of the members of the Board of Trustees as of that time?

A.—I remember their letterhead. The first one was Newton D. Baker and the last one on the list was Roscoe Pound.

Q.—And Roscoe Pound was many years the Dean of the Harvard Law School?

A.—Right.

Q.—Newton D. Baker, of course, was the Secretary of War. Were there other men of equal attainments on that board?

A.—Henry S. Denison is a name I recall. New England manufacturer. Henry Brewer, president of the Bowery Savings Bank. I don't remember the names of all of them, but I have the names of some of them. Morris Leeds of Philadelphia is one.

Q.—The present Attorney General of the United States?

A.—No, sir.

Q.—Was he later?

A.—I don't know.

Q.—Was the Solicitor General of the United States a member of that board?

A.—Not at that time.

Q.—Do these funds and foundations you have mentioned publish reports and studies from time to time?

A.—They do.

Q.—Were you at that time familiar with any of their studies?

A.—Not intimately at the time I first met Rickcord, no.

Q.—After meeting him, did you have occasion to familiarize yourself with any of the studies of those foundations?

A.—Yes. I received from him, a week or so later, a copy of a report that they published, called How to Budget Health.

Q.—Was that the report that you studied?

A.—It was a study that had been made by that organization.

Q.—What had been Mr. Rickcord's experience with such matters, if any, up to that time?

Mr. Leahy:—He could know that only by hearsay. I object, if your Honor please.

THE COURT:—The objection is sustained.

By Mr. Lewin:

Q.—Had Mr. Rickcord been in personnel work?

A.—He had.

Q.—With what companies?

A.—Brooklyn Edison.

Mr. Leahy:—We still have to object.

Mr. Lewin:—I suppose we all learn from hearing about these things. I don't know how anybody can—

Mr. Leahy:—We can only get testimony in court on what we know.

THE COURT:—I think the objection may be sustained.

By Mr. Lewin:

Q.—Did you and Mr. Rickcord have any discussions during the year 1936 after you met him?

A.—Yes, sir.

Q.—What things did you discuss?

A.—He came to my office to get some information on costs—health—sick leave costs. The first time I had met him, he was directed to come to us, I understand—

Mr. Leahy:—I object. I object.

THE COURT:—Put your next question.

By Mr. Lewin:

Q.—What was the subject matter of your discussions?

Mr. Leahy:—I object. Again, it is immaterial and hearsay.

Mr. Lewin:—This man participated in those discussions.

THE COURT:—Even so, I do not see the relevancy or the materiality of it. The objection is sustained.

Mr. Lewin:—Your Honor, I wonder if you recall these charges of godfather and godmother.

Mr. Leahy:—He is still on that talk, your Honor.

Mr. Lewin:—You are going to hear a lot about that talk before I am through with this case.

THE COURT:—I have the indictment before me. I am going to hold you as close as I can to that. I do not see anything in the indictment about this.

Mr. Kellcher:—The indictment alleges it was organized, and these are the circumstances leading up to the organization.

THE COURT:—I have ruled that the motives which brought about this organization are not relevant. If you wanted to go off into by-ways, it might be argued as appropriate, but I think it is too remote.

Mr. Lewin:—I should like to show, your Honor, that this was carefully worked out; that it was not a half-baked plan for medical advice, and all the rest of it. I haven't a thing to hide, and I should like the jury to know it.

THE COURT:—I do not imagine the jury is suspecting you of hiding anything.

Mr. Lewin:—What other basis could there be for that opening statement?

Mr. Leahy:—You must be frightened to death.

Mr. Lewin:—I am not frightened; I am shocked by it.

Mr. Leahy:—I am glad it has some effect.

Mr. Lewin:—If there is going to be anything exposed in this case, it is going to be that opening statement, from stem to stern.

THE COURT:—Let us get along. Let us not try Mr. Leahy just now. Let us get along.

I see on my copy of the indictment, on page 14 of the defendant's copy, that group health has a certain description here, and I think we ought to stick reasonably within the limits of that description.

By Mr. Lewin:

Q.—As a result of those talks with Mr. Rickcord and of your trip to Stanocola and of your reading these studies on the subject of prepayment plans, what did you do in the fall of 1936?

A.—I had some conversations with officers of the Home Owners Loan Corporation.

Q.—About how many such meetings did you have?

A.—Oh, there must have been four or five—six.

Q.—What did you discuss with them?

Mr. Leahy:—I object.

THE COURT:—The objection is sustained.

By Mr. Lewin:

Q.—Did Mr. Rickcord attend these meetings?

A.—Some of them—all of them, I guess. Yes, all of them.

Q.—Did he make any suggestions as to what you gentlemen might do?

Mr. Leahy:—I object.

THE COURT:—The objection is sustained.

By Mr. Lewin:

Q.—As a result of these conferences with the officers of the Home Owners Loan Corporation, what, if anything, did you determine to do?

A.—We determined to organize a group health plan—cooperative.

Q.—Who is Mr. John Fahey?

A.—Chairman of the board.

Q.—Chairman of the board of the Federal Home Loan Bank?

A.—Yes.

Q.—Up to this time had you approached Mr. Fahey on this subject at all?

A.—I had not.

Q.—Did you make any approaches to him after you had these discussions among the subordinate executives?

A.—Not until we presented the matter to the board and pointed out that some initial financial system——

Mr. Lahey:—I object.

THE COURT:—Yes. I would not go into that.

By Mr. Lewin:

Q.—Who is Mr. Luke Keeley?

A.—He was president of the Employees Credit Union.

Q.—Was he an employee of the H. O. L. C.?

A.—He was.

Q.—What is a credit union?

A.—A credit union is an employees' bank, a financial institution that is chartered and supervised by the District of Columbia or the Federal Government.

Q.—It is a small loan bank?

A.—An institution into which employees may deposit their savings, and loans are made to members of the credit union.

Q.—Do you know what the extent of such loans is?

Mr. Leahy:—I object; it is immaterial.

THE COURT:—The objection is sustained.

By Mr. Lewin:

Q.—Did Mr. Luke Keeley come into these discussions?

A.—He was present in one of the meetings.

Q.—Did the Credit Union take any position with regard to the subject matter of the discussion?

A.—The executive committee voted that——

Mr. Leahy:—I object; the best-evidence rule.

By Mr. Lewin:

Q.—Were you a member of the Credit Union?

A.—I was.

Q.—Will you tell us what position the credit union took?

Mr. Leahy:—I object; the best-evidence rule; also, it is immaterial.

Mr. Lewin:—This seems to be a little different from that protestation Mr. Leahy made a little while ago.

THE COURT:—I will sustain the objection. I think it all trespasses upon the general nature of my ruling, Mr. Lewin.

Mr. Lewin:—I thought not. I thought I was observing your Honor's ruling.

THE COURT:—I think it is all very much of the same order. After all, it is not all these preliminary elements that finally went into the formation of Group Health, for the reasons I have indicated.

By Mr. Lewin:

Q.—Did you participate with Mr. Keeley in the formation of a report to the Home Owners Loan Association bank board on the studies that you had been discussing?

A.—Yes, sir, we drafted a letter.

Q.—Is this the letter, dated Sept. 22, 1936 (handing a paper to the witness)?

A.—It is.

THE COURT:—Whom is that to, please?

Mr. Lewin:—This was to the members of the board—the Federal Home Loan Bank Board—and it is signed by the Washington H. O. L. C. Federal Credit Union, by Luke E. Keeley, President.

I ask that it be marked for identification.

(Letter of Sept. 22, 1936, from Washington H. O. L. C. Federal Credit Union, by Luke E. Keeley, President, to Federal Home Loan Bank Board, was marked as U. S. Exhibit 9 for identification.)

(Mr. Lewin handed U. S. Exhibit 9 for identification to counsel for the defense.)

Mr. Leahy:—I pass this to the Clerk and ask that he in turn pass it to your Honor.

THE COURT:—(After examining paper) What about it?

Mr. Leahy:—We object, if your Honor please, because it is right within your Honor's ruling.

THE COURT:—I sustain the objection.

By Mr. Lewin:

Q.—Did you approach the Bank Board itself with any recommendations for the establishment of a prepaid clinic among the employees?

Mr. Leahy:—Can't we get down to it? I do not like always to be put in the position of objecting. Your Honor has indicated the line. This puts me in a bad light.

Mr. Lewin:—I do not think it puts you in a bad light. I think you have put yourself into a bad light.

Mr. Leahy:—I don't care much what you think.

Mr. Lewin:—I should like to show, your Honor, that this was an employee plan.

Mr. Leahy:—We agree to that. Let us admit. It was an employee plan, a group plan of the employees, if that is what you want us to admit. Then we can get on.

Mr. Lewin:—I don't want you to admit it unless it is true, but I happen to be able to prove it.

THE COURT:—If it is admitted, you do not need to prove it.

By Mr. Lewin:

Q.—What was the attitude of the Home Loan Bank Board toward the plan?

THE COURT:—Are you objecting or not?

Mr. Leahy:—Yes, your Honor, I am objecting.

THE COURT:—I sustain the objection. I do not like to have to insist, Mr. Lewin, upon my rulings being respected, but it does seem to me that all this falls under the same ruling that I have made. Of course, I might be ruling on individual questions of a general nature—

Mr. Lewin:—I think perhaps my trouble is that I do not understand it. I have now got a concession from the opposing side with which I am content, on one issue.

THE COURT:—I just want you to understand the background of my ruling. There is an allegation here on page 14 of the transcript of the indictment which describes Group Health. The general nature of that organization is appropriate undoubtedly as it is described here. The question as to the motives which actuated the organization of Group Health is unimportant. Group Health is not a part of this suit.

Mr. Lewin:—That is true.

THE COURT:—I will repeat what I have already said: that the propriety of organizing it and the legality of it are not in issue here in this case. If that is so, why make it an issue? Don't you see? All these questions go into things that deal with the actuating motives for the organization of it, the propriety of its being organized. I do not think they are relevant.

I have some responsibility to keep this case within reasonable limits. I think these questions would open up a very broad avenue of inquiry, which I should like to have omitted, if it can possibly be done.

Mr. Lewin:—I wonder if your Honor would elaborate upon your ruling and inform us whether this grant of $40,000, which the H. O. L. C. made in order to get Group Health started, is in issue.

THE COURT:—It is not in issue so far. I, of course, cannot anticipate too far ahead and determine what turn the case will take. At the present moment, however, it is not in issue.

Let me disabuse your mind of one thing. The statements that counsel make do not make issues in the case. The issues are made on the allegations of the indictment and the plea of not guilty. I am not permitting counsel on one side or the other to make the issues in this case; they are going to be made upon this indictment and the plea of not guilty and then the subordinate issues upon the testimony which is relevant to this indictment.

That is the way the matter presents itself to me at the present time.

I myself do not want to sit here and make rulings on the admissibility of evidence unless it is obviously out of order. I want counsel to try their own cases in their own way, but when objections are made I have to rule upon them. If testimony is permitted to go in here and open up these questions, I cannot permit counsel on one side to present something that raises a subordinate issue of fact and not permit the other side to raise it.

So, I cannot bind myself as to what my rulings will be in the future. It all depends on what develops.

Mr. Lewin:—I think your Honor's discussion of the issues has been very helpful. I assure you I am going to try to stay within that ruling. During the evening I shall revamp a great deal the presentation of this case in the light of your Honor's ruling and shall eliminate much of it.

THE COURT:—I do not want to mislead counsel on one side or the other. I would not suggest for a moment what my ruling would be on any particular question. I am giving you what I think is a very sound view of the proper course that the case should take, but I will not go any further than that.

Mr. Kellcher:—Your Honor, may I suggest this: that certain of the documents of the defendants which the Government intends to offer contain references to this grant. Perhaps it might be helpful if there were some present ruling as to the relevancy of this grant.

THE COURT:—I cannot go too far about that. I have got to take up these questions as they arise. I have indicated perhaps more than a court would usually do what my general view of the situation is, for the guidance of counsel, but I do not want to be bound and I do not want to bind counsel too tightly as to what they should do. They know their cases better than I do. I am not attempting to direct them.

Mr. Lewin:—I can see now that I was offending against your Honor's ruling and did not realize it. I am sorry. I think we can cut it down very materially and be prepared to proceed accordingly tomorrow.

TUESDAY, FEBRUARY 11, MORNING

TESTIMONY OF RAYMOND R. ZIMMERMAN

(CONTINUED)

DIRECT EXAMINATION—RESUMED

By Mr. Lewin:

Q.—Mr. Zimmerman, after Group Health was incorporated on Feb. 24, 1937, did you participate in efforts of that corporation to get a medical director to handle the medical affairs of that group?

A.—Yes, I did.

Q.—Tell the jury what steps you took to find a medical director for Group Health.

A.—The first thing we did was to go and see the Surgeon General of the Army, General Reynolds. That was about 48 hours after we knew we would be financed, that we had the money. We went to General Reynolds and explained the features of our plan, all of the elements, and asked his assistance in locating and finding a man competent to give leadership to the plan as medical director.

Q.—Can you fix the approximate time of that interview?

A.—Yes, it was on March 24th.

Q.—1937?

A.—'37.

Q.—And were you able to obtain assistance from Surgeon General Reynolds?

A.—He offered assistance. He said that he would be—

Mr. Leahy (interposing):—I object to what he said.

THE COURT:—What who said?

Mr. Lewin:—Surgeon General Reynolds.

THE COURT:—Sustained.

By Mr. Lewin:

Q.—What assistance did he offer?

A.—He brought to our attention the name of Colonol Glenn R. Jones, a medical officer with whom he had a long acquaintance and whom he thought would be an ideal man for the position.

Q.—Now before you tell us more about Colonel Jones, did you make any efforts to find anyone else who might be suitable as a medical director?

A.—The next day we had a talk with Admiral Rossiter.

Q.—Who was Admiral Rossiter?

A.—The Surgeon General of the Navy.

Q.—What position does he now hold here in the city of Washington?

A.—I am not certain. In connection with the Gallinger Hospital, I believe.

Q.—The Gallinger Hospital: is that a Government hospital?

A.—Yes.

Q.—Did you ask Admiral Rossiter for assistance?

A.—We had the same kind of a discussion with him as with General Reynolds, and he told us—

Mr. Leahy (interposing):—I object to what he told you.

THE COURT:—Don't tell that; don't repeat the conversation.

By Mr. Lewin:

Q.—What did he do as a result of your conversation with him?

A.—He searched some of his files; made some telephone calls.

Q.—Did he suggest anybody for medical director?

A.—He made several suggestions, none of which were pursued because—

Mr. Leahy (interposing):—I object.

THE COURT:—Yes, sustained.

By Mr. Lewin:

Q.—Now, returning to Glenn R. Jones, what qualifications, if any, did he have for the position of medical director?

A.—Colonel Jones seemed to be an ideal man for this type of job. He was trained in George Washington University, taught there, and later went into the Army: He had been the commanding officer of the base hospital at Camp Devens, Massachusetts. I had served there as an officer and knew something of the work there, although I didn't know him; I knew the problems. He had served with distinction under General Wood at Camp Funston in the organization of the hospital there. He had received a distinguished service medal for that work.

Q.—What recommendation did General Reynolds give to Colonel Jones?

Mr. Leahy:—I object.

THE COURT:—What is that?

(The pending question, as recorded, was read by the reporter.)

Mr. Lewin:—This isn't offered for the truth; for the fact. The fact that he was recommended. I am later going to prove that Group Health was deprived of Colonel Jones' services. I want to show the fact of what these people believed to be the qualifications of the man.

THE COURT:—It comes within the rule announced yesterday. All these preliminaries only go to show why the particular man was selected. You see we are going off on a lot of remote, collateral issues.

Mr. Lewin:—I agree completely, and I have taken it to heart, your ruling of yesterday. But I want to point out to your Honor that this strikes right into the heart of the restraints. The charge in the indictment is that this man was prevented from going along with Group Health; it is one of the restraints charged.

THE COURT:—Well, if you can show the restraint, show it.

Mr. Lewin:—We want to show that Colonel Jones was the first of the proposed medical directors whose services Group Health was deprived of because of the activity of the defendants.

THE COURT:—Well, if there is a restraint, if you can show the restraint, do so. It doesn't make any difference whether he was the first or the fourth. It doesn't make any difference whether he was competent or not. If they offered restraints, show them; whether the man was a good man or a bad man is not at this time directly in point.

By Mr. Lewin:

Q.—What attitude did Colonel Jones manifest toward your proposition?

Mr. Leahy:—That calls for a conclusion on the part of the witness.

THE COURT:—Yes, sustained.

By Mr. Lewin:

Q.—What did Colonel Jones say about your proposition?

Mr. Leahy:—Objected to as calling for hearsay.

THE COURT:—Sustained.

Mr. Lewin:—We are going to show that Colonel Jones became one of the co-conspirators in this case. We want to show at first that he was in favor of the proposition and then against it for good substantial reason; because he joined forces with the opposition.

Mr. Leahy:—That is an entirely new charge. I stand on my objection; it is pure hearsay.

THE COURT:—Sustained.

By Mr. Lewin:

Q.—Did you offer Colonel Jones the medical directorship?

A.—We did.

Q.—Did he accept it, the medical directorship?

A.—He said that he wanted—

Mr. Leahy (interposing):—I object.

THE COURT:—Will counsel step up?

(Counsel for both sides approached the bench and conferred with the Court.)

By Mr. Lewin:

Q.—Do you know Major General Ireland?

A.—No, sir.

Q.—Do you know whether Group Health offered him the medical directorship?

A.—I never heard of it.

Q.—Now passing the Colonel Jones incident for the moment, what other efforts did you make to get a medical director: Did you have a conversation with Dr. Thomas E. Neill, the president of the District Medical Society?

(The witness testified in reply to questions that the conversation was some time in April or May 1937, in the home of John Childress, an officer of the Home Owners' Loan Corporation, interested in Group Health. They went at invitation of Childress. The witness arrived after the interview had started.)

Q.—Now, will you tell the jury what was said to Dr. Neill in regard to Group Health and its medical directorship and what Dr. Neill replied?

A.—Well, we were discussing the whole problem; the method or plan of what we intended to do. One statement I remember that Dr. Neill made was that while he was interested he couldn't make a decision about accepting the directorship until he knew the attitude of the District Medical Society.

Q.—Did Dr. Neill come as your medical director?

A.—He did not.

(The witness then stated that a medical director was secured in May; Dr. Brown had been recommended by the medical director of the Veterans Bureau, Dr. Griffith. Dr. Brown had been employed in the Veterans Administration. When employed he was compensated with a salary. His first task was to develop a floor plan for the clinic, assist in the establishment of a clinic; the determination of the necessary equipment, and at the same

time he was working aggressively in trying to assemble a medical staff. During the summer of 1937 he obtained Dr. Raymond D. Selders, a surgeon.)

Q.—Now, did you in the early summer of 1937 meet with the defendant Dr. Woodward, of the American Medical Association?

A.—Yes. He came to my office.

Q.—Will you tell the jury the circumstances under which he came to your office: had you met him before?

A.—No, I had not. It was in early June, as I recall, he came to my office.

Q.—Now tell the jury just as nearly as you can recall what was said to Dr. Woodward by you and what he said to you. How did he introduce himself?

A.—He introduced himself as a doctor from Chicago, and as being in the employ of the American Medical Association; that he was also a lawyer; that he had previously lived in Washington and was acquainted here. He told me at the outset that he was familiar with what was going on here and discussed the matter of a loan from the Home Owners' Loan Corporation.

Q.—To whom?

A.—To Group Health Association.

Q.—A loan or a grant?

A.—He considered it a loan, spoke of it as a loan, and said that if Home Owners' Loan Corporation could make a loan of this character why couldn't it make loans to other organizations, other departments of the Government, or other units in the Home Owners' Loan Corporation? I told him that it was clear that he wasn't familiar with the act which created the Home Owners' Loan Corporation; that Home Owners' Loan couldn't make a loan of that character to anybody, and had not made a loan to Group Health Association, and could not make a loan to anybody else; and he asked for a copy of the act and I gave it to him.

Q.—Did he ask for anything else?

A.—Yes, he said he was on his way to Atlantic City to attend a meeting of the American Medical Association and wanted to take a copy of that contract with him which the Home Owners' Loan had with Group Health Association.

Q.—Did you give him a copy of the contract?

A.—No.

Q.—Did you have a copy of the contract?

A.—No, I did not.

Q.—Did you obtain one for him?

A.—No, I did not.

Q.—What did you tell him with regard to the contract?

A.—I told him the contract was in the office of the secretary of the Corporation; I couldn't supply him with it.

Q.—Did he say anything else about Group Health Association at that time?

A.—Yes, we talked about it for a while.

Q.—What did he say?

A.—Well, he said that the District Medical Society was deeply concerned about the whole matter and that it was going to be a subject of discussion at the Atlantic City meeting.

Q.—Did he say anything further as to the attitude of the American Medical Association and the District Medical Society toward Group Health Association?

A.—He made it clear that they were opposed to it; that they weren't in favor of it—

Mr. Leahy (interposing):—I object—that is a conclusion: What did he say?

By Mr. Lewin:

Q.—As nearly as you can recall, give Dr. Woodward's words on that subject, and you can describe his attitude as well.

A.—His attitude was clearly antagonistic. He made it clear that he was not in favor—

Mr. Leahy (interposing):—Just give us what he said.

THE COURT:—Yes; what was said by the doctor.

The Witness:—He said the whole plan was going to be given a going-over at the American Medical Association.

By Mr. Lewin:

Q.—Did he say anything about what would happen to Group Health Association after this meeting of the American Medical Association?

A.—He predicted that it would be the end of it.

Mr. Leahy:—I object to that.

Mr. Lewin:—What is the matter with that? Isn't that the substance of what he said? He predicted that it would be the end of it. How can you get it any closer?

THE COURT:—Are those his words, in substance: I don't expect him to give the exact words.

The Witness:—Yes.

THE COURT:—That may stand.

. . . . . .

In reply to questions the witness stated he attended a meeting of the excutive committee of the District Medical Society around June of 1937.

Q.—Now how did you happen to go to that meeting?

A.—I don't recall, definitely. I was called and invited to attend. I think it was Mr. Penniman. It could have been Dr. Brown.

Q.—Who is Mr. Penniman?

A.—He was the president of the Association.

Q.—Do you remember Dr. Conklin being there?

A.—I think he was there.

Q.—Was the defendant F. X. McGovern there?

A.—I am not sure.

Q.—Do you know Dr. McGovern; did you know him before that time?

A.—I don't think so.

Q.—Was Dr. William M. Sprigg there?

A.—I don't remember who the gentlemen were. I was invited to be present. I hadn't arranged the meeting and wasn't clear as to the purpose of the meeting until after I got there; I can't remember the names of the people there.

Q.—Was Dr. Neill there?

A.—I don't remember that.

Q.—What subjects were discussed at that meeting?

A.—The meeting was called for the purpose of explaining to the group that Group Health was about to operate; the kind of plan it was, and how it was intended to function.

Q.—And was that explanation made by you?

A.—The speakers were Mr. Penniman and Dr. Brown; Mr. Penniman spoke first and Dr. Brown then. I didn't speak.

Q.—Did the members of the executive committee ask questions?

A.—Yes.

Q.—Was it a friendly meeting?

A.—Yes, not unfriendly; it was a pleasant meeting.

Q.—How long did it last, approximately?

A.—I don't remember; not too late.

Q.—Where did the meeting take place?

A.—In the office of the District Medical Society.

Q.—Some time later did you have occasion to attend another meeting with representatives of the defendant District Medical Society?

A.—When they came to meet with the Board of Trustees of Group Health Association; I attended that meeting.

Q.—Can you remember any of the doctors who came from the District Medical Society to attend the meeting with your board?

A.—A Dr. Macatee.

Q.—Was Dr. Conklin there?

A.—Again I wouldn't be sure.

Q.—Dr. Groover?

A.—Yes, he was there.

Q.—Dr. Verbrycke?

A.—I don't remember; again I wasn't an officer of the Association, and I was invited to attend.

Q.—Do you remember who was present for the trustees of the Group Health Association?

A.—Well, the meeting was well attended. My judgment would be that the majority were there; some could have been absent.

Q.—Do you know whether arrangements were made to take down the conversations or discussions there?

A.—Yes, I remember that notes were taken.

Q.—What was the subject matter of the discussion at that meeting?

. . . . . .

By Mr. Lewin:

Q.—Tell us what the subject matters were that were discussed there; was Group Health Association discussed again?

A.—Yes.

The witness testified that Group Health Association, Inc., was opened the first of November 1937. He saw Dr. Neill again after the clinic was opened, in his office on a Saturday afternoon, with Mr. Penniman, Mr. Kirkpatrick and Mr. Loomis.

Q.—Who sought the interview, if you know: Dr. Neill or the Group Health Association officials?

A.—I think the Group people. I didn't arrange the meeting.

Q.—What was the subject matter discussed?

A.—I don't believe I can remember the details of the meeting; I haven't refreshed my memory.

Q.—Was the meeting concerned with Group Health Association?

A.—It was.

Q.—Mr. Zimmerman, did you have occasion to ascertain what the salaries of the various members of Group Health Association were about the time the clinic opened, Nov. 1, 1937?

A.—Yes, I knew at the time.

. . . . . .

Q.—Mr. Zimmerman, will you tell the jury what percentage of the members of Group Health Association, as of Nov. 1, 1937, when your clinic opened, earned $4,000 or less?

A.—Eighty-four per cent earned $4,000 or less.

Q.—What per cent would you say earned less than $2,000 a year?

A.—Fifty-eight per cent, fifty-nine per cent—58.9—58.8.

Mr. Lewin:—Your Honor, with the exception of the subject matter which is subject to your Honor's ruling, I have finished the direct examination of this witness. I can conclude it with the privilege of bringing him back?

THE COURT:—I suggest I consider that point through the noon recess, and if I change my ruling I will give you an opportunity to recall this gentleman on that one ground; which, of course, would give the other side an opportunity to cross-examine on it.

CROSS EXAMINATION

By Mr. Leahy:

Q.—As director of personnel what were your duties?

A.—Well, as director of personnel I concerned myself with questions of employment policy; personnel policy; standards of employment; questions of pay; questions of salary administration; questions of hours of work and working conditions; and questions of employee health; questions of training; and some of the questions of organization.

Q.—Did you have the authority to hire and fire?

A.—No. That authority rests in the chairman of the Board.

Q.—You had no authority whatsoever about that. Why, do you think?

A.—Well, it is a legal point, sir.

Q.—Well, now, you know what I mean. Let me put it in everyday language. Could you say to Clerk John Brown, hand him a red ticket and say, "You are through work two weeks from today?"

A.—I could say that sort of thing to an employee in my own division but not to employees outside of my own division.

Q.—How big was your division?

A.—Less than a hundred.

Q.—Outside the division did you have any authority to say to John Brown, "Your services will terminate on such-and-such a date"?

A.—No, sir.

Q.—It was only the chairman of the Board who had that authority?

A.—No. You asked—your question related to who had the appointing power. You are talking now about who had the responsibility of discharge.

Q.—Well, I asked the question, probably it wasn't technically put as a director of personnel would put it, but I asked the question Who had the authority down there to hire and fire?

A.—That's right.

Mr. Lewin:—I object to this line of questioning, your Honor.

THE COURT:—I don't see the materiality of it.

Mr. Leahy:—Shall I approach the bench a moment?

THE COURT:—Well, if you wish to express it. You may have some reason that I cannot think of.

Mr. Leahy:—I would like to.

THE COURT:—Very well.

(Counsel for both sides approached the bench and conferred with the Court in a low tone of voice.)

The Witness:—Before you begin, I think I should correct a former statement. I think I answered you that I had authority to discharge an employee that worked in my own division. The correct statement would be that I had authority to recommend it, but the power to employ and discharge lies in the Board and not in any subdivision of the Board.

By Mr. Leahy:

Q.—Well, now, you mentioned the chairman of the Board at first. Who was that chairman?

A.—John H. Fahey.

Q.—Is he still chairman?

A.—Yes, sir.

By Mr. Leahy:

Q.—Can you give us the exact date now, and, if it was given, will you repeat it, of the employment of Dr. Brown as the medical director?

A.—My recollection is that it was June 5th, or 7th. It was the early part of June. I cannot give the correct date. I haven't refreshed my mind.

Mr. Lewin:—I am sorry. I thought he had given it.

By Mr. Leahy:

Q.—Had the arrangements been made for his employment before the actual contract was signed?

A.—What contract?

Q.—For his employment as medical director. You had met Dr. Brown before June 7?

A.—Yes.

Q.—Did you employ him personally?

A.—I did not.

. . . . . .

Q.—At all events, then, you went to Dr. Neill's home on the information of Mr. John Childress? Is that right?

A.—That's right.

Q.—And he is the assistant to John H. Fahey, isn't he, or wasn't he then?

A.—I think that is his title, "assistant to."

Q.—And he likewise was interested, was he not, with you, in this G. H. A.?

A.—As a member. I wouldn't say that he was an active—that his interest was more than one of a member. I don't remember his working on any committees, if that is your point.

Q.—Do you recall what interest prompted him to call you to interview Dr. Neill as the medical director or possible medical director of Group Health?

Mr. Lewin:—I am afraid I will have to object to this, your Honor.

THE COURT:—Objection sustained.

By Mr. Leahy:

Q.—Was Childress there at Dr. Neill's home?

A.—It was at Mr. Childress' home.

Q.—At Mr. Childress' home?

A.—Yes, sir. He was present.

Q.—Who else was there besides Mr. Childress and yourself and Dr. Neill?

A.—Mr. Penniman was there.

Q.—Anybody else now whom you can recall?

A.—I don't recall.

Q.—How long were you there?

A.—Not more than an hour, I don't think. I came a little late, as I recall.

Q.—Your recollection is that you were there at least an hour with Dr. Neill?

A.—No, I won't say that.

Q.—Can you give us your recollection as to how long you were there that day?

A.—I would say in the neighborhood of an hour.

Q.—Were any notes taken of the interview?

A.—None that I know of. I didn't take any.

Q.—It was a friendly meeting?

A.—Certainly.

Q.—At Mr. Childress's house. And isn't it a fact that it there developed that Mr. Childress was a personal friend of Dr. Neill's?

A.—It didn't develop there. It was known.

Q.—It was known?

A.—That's right.

Q.—And Mr. Childress as a friend of Dr. Neill was interested in turn to see if Dr. Neill would be interested to become the director of G. H. A.?

A.—That's it.

Q.—And you explained the general plan, didn't you?

A.—I did not.

Q.—Well, some one in your presence. Isn't that true?

A.—I think it was done, but it was done before I got there.

Q.—Do you recall of Dr. Neill's having said anything more than that he would want to find out what the attitude of the District Medical Society was on it?

A.—No, I don't recall.

Q.—Do you recall that he then said at that meeting, "Why, I have just been elected president and am president-elect of the Medical Society of the District of Columbia?"

A.—I didn't hear him say that.

Q.—Did you hear Dr. Neill say anything in substance to the effect that he would look into the matter and that if Group Health was legal, if it was ethical, if it was economically sound, that the job of medical director was just the job he was looking for? Did you hear him say that?

A.—No, I didn't hear him say that.

Q.—Did he say anything in substance to that effect?

A.—Well, as I testified a minute ago, the substance of what I heard him say was that before he would consider the medical directorship, that he would have to know the attitude of the District Medical Society toward that type of practice.

(The witness then was queried as to the meeting at the office of the District Medical Society.)

A.—I remember that Dr. Groover talked.

Q.—Dr. Groover? Is that whom you said?

A.—Yes.

Q.—You know he is dead, do you not?

A.—I do. Oh, I have the recollection—there was quite general participation in the discussion, but I don't remember who made the principal statements.

Q.—That was a friendly meeting?

A.—I wasn't acquainted with many of those doctors and I don't remember.

Q.—To your knowledge had you ever met or seen any of those doctors on the executive committee before that evening?

A.—I had seen some of them, but I wasn't personally acquainted, I don't think, with any of them.

Q.—Had you ever talked with them or been in a group who were talking with them before this meeting?

A.—I don't think so.

Q.—Had you known Dr. Neill before you met him at Mr. Childress's house?

A.—No. I knew who he was, but I didn't know him.

Q.—Now, this meeting was a friendly discussion, was it not, as to what the plan of G. H. A. was?

A.—It was friendly for the most part. A little spirited in spots, but not more than you would expect.

Q.—There was discussion back and forth about the merits pro and con; is that right?

A.—Right. And sometimes the meeting was controversial.

Q.—Sometimes the meeting would get a little warm in spots as the controversy would develop about the merits of this point or the demerits of that point; is that right?

A.—That's right.

(After some discussion as to the conversation at this meeting dealing with estimates of cost, the examination continued.)

Q.—But in connection then with the clinic, was there any question raised as to whether you could equip a clinic, lease the quarters, hire a staff of doctors, hire nurses, on the rates that you were going to charge?

A.—I don't recall.

Q.—Well, don't you remember that they asked you broadly—not you, but I mean Mr. Penniman or Dr. Brown or some one in your presence and yourself—asked you how you were going to finance a clinic with all the equipment which you said you were going to put in there?

A.—My recollection of that meeting, sir, is that there wasn't very much discussion on that point.

Q.—Well, don't you remember one member of the executive committee saying to Dr. Brown, "Doctor, will you show us the contract on which you got this money?" and Dr. Brown said, "No, I won't." Do you remember that?

A.—I think I do, but I could be wrong.

Q.—What is your best recollection? Was or was not that request made to Dr. Brown and did he or did he not make that answer?

A.—I am not sure. I think that the request was made to see the contract there, but I am not sure.

Q.—And is your best recollection that the request was not acceded to and that he did not permit the contract to be seen?

A.—That's right. I don't think it was.

Q.—Now, don't you remember this, too, at that meeting, when the executive committee had listened to the outline of your plan and they found that the plan provided for those only who were able to pay dues and they said to either Mr. Penniman or Dr. Brown or to you: "Well, what are you going to do with the poor chap who cannot pay or who isn't able to join your association? Who is going to take care of him?" And do you remember Dr. Brown making the answer: "Oh, we will throw them over on you." Do you remember that?

A.—I remember that the subject—the point was raised. I don't remember exactly what Dr. Brown's comment was.

Q.—Well, it was to the effect that the District Medical Society's members would take care of those you didn't want. Isn't that right?

A.—I cannot testify to that.

Q.—You have no recollection on it at all?

A.—I remember that there was some pleasantry in a comment that Dr. Brown made right at this time and on this point. It was in connection with Dr. Brown making the point that a group of this sort wasn't a charitable organization; it was organized for the purpose of making charity unnecessary. That was the spirit of the point that he was making.

Q.—Well, do you remember that when charity did become necessary that he said then it would be for the District Medical Society members to take care of the charity?

A.—(No answer.)

Q.—See if I can refresh your recollection this way, Mr. Zimmerman: Don't you remember then Mr. Penniman making the statement, "Well, nobody can play golf in a golf club unless he pays his dues"?

A.—Yes.

Q.—You remember that?

A.—Yes. I had forgotten, but I do remember now.

Q.—And wasn't it in that connection that he said those who paid the dues we will take care of, and those who cannot you members of the District Medical Society will take care of?

A.—I remember the point was brought out it was only those who were members of the association who would receive the benefits. Although I do remember, too, that the statement was made by Brown or Penniman—the point was brought out—that the staff would want to be cooperative and helpful in connection with charity cases after hours. That point was brought out. But it was an incidental point, their making any claims that they were going to do charity work, I am sure.

. . . . . .

Q.—Now, was the meeting at G. H. A. headquarters a sort of adjourned meeting of this one at the headquarters of the District Medical Society?

A.—I would say that it was. It was suggested that the medical people come back to the Group Health trustees with a suggested plan.

. . . . . .

Q.—Now, did you meet any members of the executive committee in between the meeting of the executive committee about which we have just talked and the second meeting at Group Health headquarters?

A.—I don't think I did.

Q.—Do you recall whether you attended a luncheon at the Raleigh Hotel with Mr. Penniman?

A.—And Dr. McGovern.

Q.—Dr. McGovern.

A.—I did, but I don't remember when it was. It could have been in between, and if it was, I did meet with one of their members.

Q.—How did you happen to be present at that luncheon?

A.—Mr. Penniman called me on the telephone and asked me if I would like to have lunch with him and Dr. McGovern.

Q.—Now, do you remember what Dr. McGovern was asking for at that luncheon from Mr. Penniman? Try to think.

A.—Well, I know what my feelings were there when we came away from the luncheon. I was very much at a loss to know what the purpose of the meeting was.

Q.—I want to know what Dr. McGovern asked Mr. Penniman, the president of the association, at that meeting.

A.—I don't recall that he asked for anything. We talked about horses and golf and dogs and everything else.

Q.—Did he ask how you were going to obtain funds to finance the clinic?

A.—I have heard that he did ask that, but I didn't hear him ask that, ask about the contract. I didn't hear him make that request, and was surprised when I was told that he claimed that he had asked for the contract at that time.

Q.—Well, what did you do at that meeting, at the luncheon, just talk golf and dogs and horses?

Mr. Lewin:—Had lunch, I guess. That is what you usually do at luncheons.

The Witness:—It wasn't an important luncheon.

. . . . . .

Q.—Let me see if I can refresh your recollection again. Do you remember a discussion at that luncheon and Mr. Penniman saying to Dr. McGovern, "You have no more right to see that contract than you would to see a contract between an express company and the owner of a store on F Street"?

A.—No, I don't remember that.

. . . . . .

Q.—Don't even remember the lunch. All right. Now, do you remember how long after that day when you were at the Raleigh Hotel that the meeting occurred at the Home Owners Loan headquarters?

A.—I can't answer that. Sorry. I don't remember.

(The witness was queried as to events leading to the opening of the clinic of Group Health Association.)

Q.—Had you leased the quarters for the clinic when you appeared before the executive committee of the District Medical Society?

A.—I don't remember.

Q.—Was Group Health any further along than having just been organized, its charter taken out, its by-laws prepared, and the medical director appointed when you met the executive committee of the District Medical Society?

A.—Well, I think all those things that you mentioned had been done prior to that meeting. Whether we were further along, yes, I would say we were further along.

Q.—Can you now tell whether you had made arrangements to lease the quarters for your clinic?

A.—I don't know the date of the lease.

Q.—Did you have anything to do with the arranging of the lease?

A.—No, sir.

Q.—Did you have anything to do—

A. (continuing):—Wait a minute. Did I have anything to do with it? Some discussions. I was invited to take part in discussions, and I looked, with a committee, at two or three places.

Q.—Then you had just as much to do with it as any other member of the committee?

A.—No, I didn't sign the contract and I wasn't a party to the negotiations on price.

Q.—Did you go up to see the proposed site before it was selected?

A.—I did.

Q.—And you went to other sites, didn't you?

A.—That's right.

Q.—You assisted, then, in the selection of the location?

A.—I took part in it. It was not my decision. I don't think I was present when the decision was made. There was a responsible committee that was dealing with that problem. I don't think I was very helpful.

. . . . . .

(The witness was queried as to his meeting with Dr. W. C. Woodward.)

Q.—Were any notes taken of the meeting at all?

A.—I dictated a memorandum of the meeting after he left. I called Mr. Penniman to say that I had had—that Dr. Woodward had been in my office. I found that he was not in his office, was out of town, and I wanted him to know that I had had this visit. I made a memorandum. Is that what you mean by making notes? There was a memorandum written.

Q.—Did you make it just as soon as Dr. Woodward left your office.

A.—Yes, I would say within an hour.

Q.—Where is that memorandum, Mr. Zimmerman?

A.—I don't know.

Mr. Lewin:—I have it. Would you like to have it?

Mr. Leahy:—Yes.

(There was further discussion of the conference with Dr. Woodward.)

Q.—And this is a memorandum that you made and transmitted—was it to Mr. Penniman, W. F. Penniman?

A.—It was a matter of letting him know. I was not an officer of the organization and I felt that a thing of this sort—I felt that he had called on the wrong person.

Q.—Did you tell him so?

A.—My recollection is that I told him I was not an officer of Group Health.

Q.—Did you tell him to go over to see Mr. Penniman to get the contract?

Mr. Lewin:—Why don't you ask him to read this memorandum now?

Mr. Leahy:—Now, please. We are having a good time together. Don't interrupt us.

Mr. Lewin:—I think it would be much more fair. Here is the memorandum right in his hands.

Mr. Leahy:—Who handed it to him?

Mr. Lewin:—You did, at my request.

By Mr. Leahy:

Q.—Read it over, Mr. Zimmerman, and refresh your recollection.

Mr. Lewin:—And let us have it read to the jury.

Mr. Richardson:—Oh, no.

Mr. Lewin:—Why do you want to keep it from the jury?

By Mr. Leahy:

Q.—Have you read it?

A.—I told him he ought to talk to our Medical Director.

Q.—Who was your Medical Director on June 5?

A.—Dr. Brown—if he had been employed then. Yes; I guess he was. I don't remember the date he reported for work, but he had been selected and approved. He was the Medical Director; yes.

Q.—You told him that he ought to go and see your Medical Director, and then he asked you the question, "You mean, Dr. Brown?" And then you answered, and he said, "I know him, having met him at the Veterans Administration"?

A.—No; he said that he knew him.

Q.—And then did you tell him that Dr. Brown would be at the American Medical Association convention at Atlantic City?

A.—That is right.

Q.—You knew that?

A.—I had been told that he was going to attend.

Q.—After having seen this memorandum, Mr. Zimmerman, do you recall now that there was a discussion about money from the Federal Home Loan Bank Board which Group Health Association had received?

A.—With whom?

Q.—With Dr. Woodward.

A.—Yes. As I testified a minute ago, we opened up on that note.

Q.—You opened up on what?

A.—He made the point that he understood a loan had been made, and he was concerned that they would make other loans. That was the first part of our conversation. And I told him it was not a loan.

Q.—You knew it was not, did you not?

A.—Yes, sir.

Q.—Did you tell him what it was?

A.—I don't know that I did.

Q.—Why didn't you want to tell anybody about what that was? Why was Group Health Association trying to keep secret this contract which it had with the Federal Home Loan Bank Board?

Mr. Lewin:—Maybe there is something in the memorandum that explains that.

A.—It was very clear from the attitude of Mr. Woodward that he was not friendly nor did he intend to be helpful to us, and he told me that he was a lawyer representing the American Medical Association, and I suspect that I was a bit guarded in my conversation.

By Mr. Leahy:

Q.—What was there in the transaction that you were afraid of, whether he was a lawyer or not?

Mr. Lewin:—He did not testify that he was afraid of anything.

Mr. Leahy:—He said he was guarded.

Mr. Lewin:—Yes; but he didn't say he was afraid. He is not afraid.

By Mr. Leahy:

Q.—Why were you guarded, whether he was a lawyer or a judge or who it was that was talking with you about this transaction?

A.—I think there were plenty of people who were familiar with the nature of that contract. It was discussed with people frankly and freely who we thought could be helpful and would be helpful to us.

Q.—In other words, you discussed it frankly and freely with people that you thought would be helpful to you?

A.—Medical people, people interested in the business arrangements of this organization, the administration plan.

Q.—Who were the people that you discussed it with?

A.—Oh, there were plenty of them.

THE COURT:—I think that is sufficient.

(Mr. Leahy then took up the question of the contract between G. H. A., Inc., and H. O. L. C.)

Q.—Do you think that was cooperation—refusing to give the District Medical Society or the American Medical Association information as to how you could make this an economic success?

A.—I would say that the details of the contract were not half as essential as were the principles of the plan.

Q.—In other words, you did not consider the ability to put the principles into effect as important enough to impart them to the District Medical Society or the American Medical Association; is that right?

A.—We knew what could be done and we knew what had been done, and we went ahead and did it, and it is running.

Q.—But you refused to tell the District Medical Society or the American Medical Association what you had done to finance these principles you are talking about; is not that right?

A.—No.

Q.—Didn't you just tell us that the contract of the Association or the terms of it were nobody's business?

A.—No, sir; I didn't say that.

Q.—What did you say?

A.—I told Dr. Woodward that I didn't have the contract.

(The witness was asked about a visit to the office of Dr. Neill.)

Q.—Do you recall now when that was.

A.—No. I recall it was a Saturday afternoon.

Q.—Do you remember where it was?

A.—It was in his office.

Q.—Do you remember where his office was at that time?
A.—No; I don't remember.
Q.—Was anybody with you?
A.—Yes. I was in a party that went there.
Q.—Who was in that group?
A.—Mr. Penniman, I think, Mr. Kirkpatrick and, I think, Mr. Loomis.
Q.—Who was Mr. Kirkpatrick?
A.—He was the vice-president of Group Health Association.
Q.—What position did he hold in the Home Owners Loan Corporation?
A.—He was in the Accounting Division.
Q.—Who was Mr. Loomis?
A.—He is assistant to the chairman of the Board.
Q.—Who is the chairman of the Board?
A.—John Fahey.
Q.—What was the purpose of your going to see Dr. Neill on that occasion?
A.—I have forgotten. I don't remember the purpose of the meeting now. It seems to me it was some case—
Q.—Is it as hazy in your mind now as the luncheon at the Raleigh Hotel?
A.—I don't remember specifically. There are others that can testify better to this. I was not responsible for calling the meeting.
Q.—Have you any memory now of anything that took place at the meeting which you can tell us about?
A.—Yes. I can testify to this very definitely, that Dr. Neill was now in a critical frame of mind toward Group Health.
Q.—What made him critical? What did he say to indicate that?
A.—He was opposing the principle of prepayment at that time, which surprised me very much.
Q.—That is one thing. You remember that?
A.—I do, very definitely.
Q.—Anything else?
A.—That is all I recall.

. . . . . .

Mr. Leahy:—Dr. Neill, will you stand, please?
(The person addressed stood as requested.)
By Mr. Leahy:
Q.—Do you recognize Dr. Neill?
A.—Yes, sir.
Mr. Leahy:—Now you may be seated, Dr. Neill.
By Mr. Leahy:
Q.—Mr. Zimmerman, is it your recollection that when you met Dr. Neill at Mr. Childress' home you asked him if he would be interested in becoming Medical Director?
A.—No; I didn't ask him.
Q.—Did some one in your presence?
A.—No.
Q.—Let me see if I can refresh your recollection further. Is it not a fact that when you were at Mr. Childress's house in the group which was talking with Dr. Neill, Dr. Brown had already been appointed Medical Director?
A.—I would say that there would have been no purpose to that meeting, then. We were looking for a Medical Director.
Q.—Were you not looking for a surgeon?
A.—My recollection is that they were going to need a surgeon, but that they were looking for a medical director at that time.
Q.—Was it not in connection with your wish to have Dr. Neill act as the surgeon of G. H. A. that you and the others were present there that evening?
A.—That is not my recollection.
Q.—You said that Dr. Neill left. Do you recall the reason for his leaving?
A.—No; I didn't hear.
Q.—See if you can refresh your recollection. Do you not remember that Dr. Neill said that he had to attend and preside at a meeting of the District of Columbia Medical Society at that very time.
A.—My impression was, sir, that he had to go on a case. I don't know it, and he could have told the others and I did not hear it. We were in a large room.
Q.—But you have no memory of Dr. Neill's saying anything about his having to attend a meeting of the District Medical Society?
A.—No.
Q.—And you have no recollection, as he left, of his saying, in substance, "Gentlemen, if this is legally, ethically, and economically sound it is the job I would like."?
A.—No; I don't remember his saying that.
Mr. Leahy:—Dr. Woodward, will you stand up, please?
(The gentleman addressed stood as requested.)
By Mr. Leahy:
Q.—Is that the gentleman who came to see you that morning in your office?
A.—I think so. I have not seen the doctor since.
Q.—See if I can refresh your recollection a little more about that meeting, Mr. Zimmerman. Do you recall that when Dr. Woodward came to see you at your office he asked you if he might see a copy of the contract?
A.—My recollection is that he asked for a copy of it.
Q.—Did you then say, "I will have to go out and consult counsel before I answer that question"?
A.—No; I don't remember that.
Q.—Do you remember that you did leave the room at any time, leaving Dr. Woodward in your office?
A.—No. Did I leave the room? If I did, I had forgotten it. I don't think I talked with any one; I didn't consult any one.
Q.—You have no recollection?
A.—I went outside—I think I stepped into the outside room, now that you remind me; but I had forgotten it. I stepped outside the door to the secretary's office.
Q.—What for?
A.—Frankly, I don't know.
Q.—Did you not make a telephone call?
A.—No; I don't think so.
Q.—What was there that took you away from the conference with Dr. Woodward, out into your secretary's room?
A.—I believe that was the time that I learned that Mr. Penniman was not in his office. I thought that that type of meeting should be held with the president of the organization, and not with some person who was not officially connected with Group Health.
Q.—Do you remember now that you did telephone Penniman's office?
Q.—I could have.
Q.—Well, didn't you?
A.—I am not sure that I did; but I know that shortly after—I either did then or I did after Dr. Woodward left. The point is, for the jury, that I got in touch with Mr. Penniman's office either before Dr. Woodward left or immediately after, to advise him of the substance of our conversation.
Q.—And the point, also for the jury, is that you did leave the room and go to your secretary's room for a purpose which you cannot now recall?
A.—Just like stepping to the door.
Q.—You did step out of the room?
A.—If you say I did. I had forgotten it.
Q.—I don't say anything. I wasn't there.

RE-DIRECT EXAMINATION

By Mr. Lewin:
Q.—Mr. Zimmerman, I would like you to refer to this memorandum of yours to Mr. Penniman, dated June 5, 1937, which was shown you by Mr. Leahy, and I will ask you to look at the next to the last sentence of that memorandum. Just read it to yourself (handing a document to the witness).
I want to know whether that refreshes your recollection as to the substance of anything Dr. Woodward said to you about what he expected to do.
A.—No; I don't remember his exact words.
Q.—I did not ask you for that. I asked you whether it refreshes your recollection as to the substance of what he indicated to you in his conversation he expected to do.
A.—As I testified a minute ago, he said he was going to Atlantic City to a meeting of the A. M. A., and this whole subject was going to get a careful working over.
Q.—What did he say he expected to do, if anything?
A.—I don't think he said specifically what he was going to do.
Mr. Lewin:—Your Honor, I would like to offer that report in evidence. It is a report from Mr. Zimmerman to Mr. Penniman that was referred to by counsel on cross examination.
Mr. Leahy:—I object, if your Honor please.
Mr. Lewin:—You recall that Mr. Leahy went into the subject very fully about what Mr. Zimmerman reported to Mr. Penniman, or attempted to report to him.
Mr Richardson:—That does not help it any.
Mr. Kelleher:—Another thing, your Honor: he went into detail as to whether he had written any memorandum and why he had written it, and we think the jury is entitled to see the memorandum, to see what the purpose of it was.
THE COURT:—Counsel on both sides have taken it up as a means of refreshing the recollection of the witness.
Mr. Lewin:—Mr. Leahy pressed the witness on cross examination as to his communication to Penniman—
Mr. Leahy:—I did not press any such thing.
Mr. Lewin:—Oh, yes. He even made statements about his going out into the office to speak to his secretary.

THE COURT:—Step here a minute, Mr. Leahy.

(Counsel for both sides approached the bench and conferred with the court in a low tone of voice.)

By Mr. Lewin:

Q.—Mr. Zimmerman, you were asked on cross examination about the amount of the dues which Group Health Association charged its members. Will you tell the jury what those dues were initially?

The Witness:—Two dollars and twenty cents a month for individual members, and $3.30 a month for family members.

By Mr. Lewin:

Q.—What type of service was given members in return for those dues?

A.—What we called a substantially complete medical service, including hospitalization and examination.

Q.—How much hospitalization was given a member or his dependents in return for those dues?

A.—Twenty-one days, I believe, for any single illness.

Q.—What site was finally selected for a clinic?

A.—On 1 Street between Thirteenth and Fourteenth streets.

Q.—Why was that site selected? Did it have any advantages?

A.—It was centrally located, and it was a nice modern building. It seemed to be about what we wanted.

Q.—Were the floors of that building leased by Group Health Association?

A.—Yes; one floor.

Q.—Were alterations made in the building?

A.—Yes.

Q.—What was the purpose of making such alterations?

THE COURT:—I do not think I would go so much into detail, Mr. Lewin.

A.—To make it suitable for our purposes, is all.

By Mr. Lewin:

Q.—You said that Group Health Association was acquiring its medical equipment and apparatus during the summer?

A.—That is right.

Q.—Who was the active man in making those selections?

A.—Dr. Brown, the Medical Director.

RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—Are you familiar with the medical services which Group Health agreed to render for the dues which you have just mentioned?

THE COURT:—I think we are going to waste time on that. Was there not a written contract with the members?

Mr. Leahy:—I just wanted to identify it. That is the very thing I had in mind, your Honor.

THE COURT:—Very well.

By Mr. Leahy:

Q.—Will you kindly look this over (handing a document to the witness) and see if you can identify it as the by-laws?

Mr. Kelleher:—The by-laws are already in evidence, your Honor, under a stipulation, as Exhibit 1.

THE COURT:—I think that is true, is it not?

Mr. Leahy:—I did not know they were, your Honor. If they are, all right.

Mr. Burke:—The stipulation is in evidence.

THE COURT:—It will be understood now that they are in evidence. Both sides agree they are in evidence.

By Mr. Leahy:

Q.—There was just one question that I wanted to ask you with reference to that matter of Dr. Woodward's chat with you, and this is a concluding question. Did you say to Dr. Woodward that Dr. Brown would have a copy of the contract at the American Medical Association meeting in Atlantic City the following day?

A.—No; I did not.

Q.—You are sure about that?

A.—Yes. I said that Dr. Brown would be there.

Mr. Leahy:—That is all.

TESTIMONY OF ELSIE P. SADLER

DIRECT EXAMINATION

By Mr. Kelleher:

Elsie P. Sadler stated she was employed with the Home Owners Loan Corporation on July 26, 1937, as a clerk-stenographer. She attended a meeting of the board of trustees of G. H. A. on the evening of that day by order of Mr. Penniman. She was assisted by Roseannette Barrent.

Mr. Kelleher:—I will ask the reporter to mark this transcript for identification.

(Transcript of notes of meeting of July 26, 1937, was marked U. S. Exhibit No. 10 for identification.)

CROSS EXAMINATION

By Mr. Leahy:

Q.—Miss Sadler, did you say that you were employed as a clerk-stenographer down at H. O. L. C.?

A.—Yes, sir.

Q.—What do you do? What are your duties?

A.—I was secretary to Mr. Penniman's assistant, doing stenographic work in the office.

. . . . . .

Q.—Did you both transcribe what each one said at the meeting?

A.—We made one transcription, but we checked our notes together before we wrote it.

Q.—Did you make the transcription of Miss Barrent's notes?

A.—I typed—I checked my notes with her notes and we sat together. We took the notes and checked our notes and we wrote what both of us had.

Q.—I am now showing you page 15. What does the "and so forth, and so forth" mean at the bottom?

. . . . . .

A.—We sat at the end of a large table, and there were certain things said that we were not able to hear. We took every word that we could hear, but there was just an occasion or so when we were not able to hear.

Q.—Do you know for how long that occasion would last, or how much was said?

A.—Not very much.

TESTIMONY OF WILLIAM FREDERICK PENNIMAN

DIRECT EXAMINATION

By Mr. Kelleher:

William Frederick Penniman stated he was Deputy Governor of the Federal Home Loan Bank System, since January, 1938. He was in the Home Owners Loan Corporation in 1937, and went over to the new position in 1938. He was the Assistant General Manager in charge of the Pacific Coast area. He first came with the H. O. L. C. in November, 1933. Previously he had been living in New York. He was with the investment house of Blythe & Company, 120 Broadway, New York.

He had participated in the formation of G. H. A. in the early part of 1937 and was elected president.

Mr. R. T. Berry was elected secretary-treasurer.

Mr. W. C. Kirkpatrick was elected vice president.

He had participated in conferences with the Surgeons-General of the Army and Navy in an effort to locate a medical director.

The conference with Dr. Neill was prior to the employment of Dr. Brown as medical director?

. . . . . .

Q.—Will you tell us what you recall concerning the conversation between you and Dr. Neill?

A.—The engagement was arranged for by Mr. Childress at his home, and Mr. Horace Russell, Mr. Zimmerman and I met him there at Mr. Childress's home and we discussed Group Health.

Q.—When you say you discussed Group Health, will you tell us whether you explained to him the nature of the organization?

A.—Oh, yes.

Q.—Tell the jury what you told Dr. Neill about G. H. A.

A.—We told him that it was the group practice of medicine whereby these employees would be able to get full medical service at a given rate per month, the purposes for which we were attempting to establish Group Health, and that we were very anxious to get just as competent a medical director as possible, and that we would be very happy indeed to have Dr. Neill serve as Medical Director.

Q.—Let me ask you this before we go on any further. What purpose did you tell him that G. H. A. was organized for?

A.—In order to give medical service to employees at a stipulated rate.

Q.—Did you explain to him that G. H. A. contemplated group practice?

A.—Yes.

Q.—Did you explain to him that doctors were to be employed on a salary basis?

A.—Yes.

Mr. Leahy:—Don't lead him. Ask him what was said.

By Mr. Kelleher:

Q.—What did you tell Dr. Neill about the method by which employees would pay for the services of G. H. A.

A.—What the employees who were members would pay?

Q.—Yes.

A.—That they would pay on a monthly basis—dues on a monthly basis.

FEBRUARY 11, AFTERNOON

Thereupon

DIRECT EXAMINATION—RESUMED

By Mr. Kelleher:

Q.—Did you explain to Dr. Neill the duties of a medical director of G. H. A.?

A.—Yes, we went into it very thoroughly with Dr. Neill. We were particularly anxious to have him as the medical director and, in making the offer, we went into the subject very thoroughly as to what we would expect the doctor to do.

Q.—And you told him that in detail?

A.—Yes. Our idea of the medical director was that he would be in charge of the staff and nurses and have everything to do with the medical side of it.

Q.—Will you please tell us what Dr. Neill said to you?

A.—My recollection is that he said he didn't see anything wrong with the setup, with what we wanted to do. He had some ideas and made some reference to a type of service being offered by the Potomac Electric, or Chesapeake & Potomac Telephone Company—I don't remember which—in which either he or his partner was interested, but that his final decision would have to rest with the attitude of the District Medical Society.

Q.—Did Dr. Neill become medical director of G. H. A.?

A.—No, he didn't.

Q.—Who did become medical director?

A.—Dr. Henry Rolf Brown.

Q.—Who suggested Dr. Henry Rolf Brown to you?

A.—Mr. Griffith, or Dr. Griffith of the Veterans Administration.

Q.—When did Dr. Brown become medical director?

A.—I think he officially assumed his duties in the early part of June 1937.

Q.—Did you in the latter part of May, or early part of June 1937, receive a letter purporting to be signed by Dr. J. Russell Verbrycke, Jr.?

A.—I recall such a letter.

Q.—I show you exhibit No. U. S. 11 for identification and ask you whether this is the letter which you received, purporting to come from Dr. Verbrycke.

A.—That is the letter.

Mr. Kelleher:—I offer Exhibit 11 for identification in evidence, (handing letter to Mr. Leahy).

"Mr. W. F. Penniman, May 29, 1937.
1869 Wyoming Avenue,
Washington, D. C.

"Dear Mr. Penniman:

"Group Health Association, Inc. has been brought to the attention of the Medical Society of the District of Columbia. The Medical Society has had a part in the formation of the present beneficent organizations such as Group Hospitalization, the Central Admitting Bureau, and the Physicians and Dentists Service Bureau, and the approval and help of the Society has been a vital factor in the success of these organizations.

"May I ask, since your organization so deeply affects health problems in the city, if you will be good enough to submit a copy of your charter and by-laws, with a copy of the contract with your members?

"Thanking you for your cooperation, I am,

"Very truly yours,
"J. Russell Verbrycke
"Chairman of Committee on Economics,
"Medical Society of the District of Columbia."

By Mr. Kelleher:

Q.—What was your discussion with Dr. Verbrycke after you telephoned him about this letter?

A.—The letter, as you read it, asks for a copy of the by-laws, a copy of the contract, and charter, and in my discussion with Dr. Verbrycke over the telephone—and I purposely called him because I felt I could better explain to him over the telephone the details than I could in a letter,—I explained to him that the by-laws of the Association had been distributed to the members, every member had one, and I thought he would have no difficulty in getting a copy of the by-laws. As to the matter of the charter, it was a public record; he could get that without any trouble, but the contract, which I understood he wished to have, I told him I was without authority to give him that.

Q.—On June 24, 1937 did you attend a meeting of the executive committee of the Medical Society of the District of Columbia?

A.—Yes.

Q.—Who attended with you for G. H. A.?

A.—Dr. Brown and Mr. Zimmerman.

Q.—Do you recall who presided at the meeting?

A.—My recollection is Dr. Conklin presided; I think he was the one; I am not sure about that.

Q.—Can you tell us who was present at the meeting in addition to you, Mr. Zimmerman, Dr. Brown, and Dr. Conklin?

A.—There were quite a group. I doubt if I could recall the names of them. I met a great many just at that meeting that evening.

(On inquiry the witness included also Drs. J. L. Thompson, F. X. McGovern, William M. Sprigg, Verbrycke, R. Arthur Hooe, H. C. Macatee, Thomas E. Neill, Sterling Ruffin.)

Q.—Anybody else who you can recall?

A.—Yes, I think there was one whose name I can't recall now; he was identified as an x-ray specialist.

Q.—Dr. Groover, now deceased?

A.—Yes, that is his name; Dr. Groover was there.

Q.—Now will you tell us what occurred at that meeting?

A.—Well, as I recall it, the meeting was designed primarily to acquaint the District Medical Society with our purposes, and what we were aiming to do.

Q.—Whose purposes?

A.—Group Health Association. We wanted them to have full information concerning it; and the primary purpose was to solicit the aid of the District Medical Society in helping us to get organized with the proper medical staff, et cetera. We wanted them to know as much about it as we could.

The witness stated he addressed the meeting, also Dr. Brown and Mr. Zimmerman.

Q.—Did any of the doctors have anything to say?

A.—I think there were some questions asked and we endeavored to answer them.

Q.—Who asked the questions?

A.—I remember Dr. Hooe, and Dr. Groover, asked some.

Q.—Dr. McGovern?

A.—I think so; I am not sure.

Q.—When you say "asked questions" do you mean about Group Health Association?

A.—Yes, and we answered them to the best of our ability.

Q.—Did Dr. Conklin, too, to the best of your recollection?

A.—Yes.

Q.—Dr. Neill?

A.—I don't recall that Dr. Neill did.

Q.—Now you have already testified that Dr. J. Lawn Thompson was present at the meeting. Did you, subsequent to the meeting, talk with Dr. J. Lawn Thompson?

A.—Yes, Dr. Thompson visited me in my office; or came by to see me and said he wanted to talk with me.

Q.—How long after the meeting was this visit of his?

A.—I should say within ten days or two weeks, not very long.

Q.—Ten days or two weeks?

A.—Yes, and he said he wanted to talk with me about Group Health; that he was very much concerned.

Mr. Leahy (interposing):—I object to the conversation of Dr. Thompson outside the presence of the defendants.

(Counsel for all parties approached the bench.)

By Mr. Kelleher:

Q.—Mr. Penniman, in July, 1937, did you receive a letter which purported to be signed by Dr. F. X. McGovern?

A.—Yes, I did receive such a letter

Q.—Did you telephone Dr. McGovern and discuss that letter?

A.—Yes.

Q.—I show you U. S. Exhibit 12 for identification and ask you if this is the letter purporting to be signed by Dr. McGovern that you received.

A.—Yes, it is.

Mr. Kelleher:—I offer Exhibit No. 12 for identification in evidence.

Mr. Leahy:—No objection, your Honor.

(Letter July 15, 1937, McGovern to Penniman, previously marked U. S. Exhibit 12 for identification, was received in evidence.)

Mr. Kelleher:—The letter is as follows: (Reading.)

"The Medical Society of the District of Columbia,
"1835 I Street, Northwest,
"Washington, D. C.
"July 15, 1937.

"Mr. W. F. Penniman, President,
Group Health Association, Inc.,
Home Owners' Loan Corporation,
Washington, D. C.

"Dear Mr. Penniman:

"At the recent meeting held in the Medical Society Building, when you, Mr. Zimmerman and Dr. Brown were present and discussed with us the plans and purposes of your organization, you were kind enough to say that your board of trustees would receive a committee from the Society for further discussion on the problem.

"The committee of the Society having this matter in charge finds itself unready to discuss the matter intelligently with you without further explanation. I am therefore requested to request, and I do respectfully ask, that you furnish me with copies of (a) your contract with Home Owners' Loan Corporation; (b) your adopted constitution and by-laws;

(c) your form or forms of application; and (d) any form of contract or agreement setting forth the service to be rendered to members and their dependents.

"Thanking you, I am
"Very truly yours,
"F. X. McGovern, M.D.
"Chairman, Subcommittee of Executive Committee."

By Mr. Kelleher:

(Mr. Perriman again described the luncheon with Dr. McGovern and Mr. Zimmerman at the Raleigh Hotel.)

A.—It was a very pleasant affair. We talked about a good many things, with particular reference to his request that we give him the documents which he had asked for. I told him that the matter of securing the charter was not a difficult thing; that it was a public record. I also told him we could not give him the contract. We talked pretty much during the lunch hour on general subjects.

Q.—Did Dr. McGovern tell you why he wanted these documents?

A.—He did in his letter.

Q.—Did you attend a meeting on July 26, 1937 with certain representatives of the Medical Society?

A.—Yes.

(Mr. Penniman described the meeting in the board room of the Federal Loan Bank.)

Q.—What was the nature of the discussions at this meeting?

A.—They had promised or asked if we would receive a committee. We said, "Of course, we would be delighted to have them," and it was a continuation of the previous discussion; and I think Dr. Macatee took the lead, and we went into considerable detail about this type of practice. Dr. Groover took a part in which he spoke of the type of this practice in other countries. It was a pretty general discussion. I took the general impression from the meeting that they would like to have us carry on with the Association but let their doctors do the practicing.

Q.—What did they propose that the Association would do?

A.—We were to have the membership; we were to collect the membership fees; to act as a kind of collection agency; we were to collect dues and when the members were sick they were to be attended by the local doctors.

Q.—Now, Mr. Penniman, you told us Dr. Brown was appointed as medical director. What were his first duties as director?

A.—Well, they started off as a combination of duties. The first thing was to try and organize his staff, and while doing that, to arrange for the purchase of the equipment; and he assisted in the location of space, adequate space.

Q.—Who determined what equipment the clinic should have?

A.—Dr. Brown.

Q.—Will you describe the next duty of Dr. Brown after he had located the clinic and determined upon the equipment of the clinic, that the clinic needed?

A.—He was busily engaged in selecting a staff.

Q.—Will you describe the procedure which he followed in obtaining a staff?

A.—Well, I don't know that I can give it to you exactly, because we depended on him to get the staff. He, being a medical man, had his own way. He did write, and contacted some doctors; wrote to several doctors, did the investigating of their qualifications pretty thoroughly and when he arrived at the conclusion that a person contacted did have the necessary qualifications the question was brought to the board with respect to the salary to be paid the individual.

Q.—Did Dr. Brown make any recommendation as to salaries?

A.—Yes, he did.

Q.—And did the board of trustees accept his recommendations?

A.—They did.

Q.—Who was the first doctor that Dr. Brown obtained for G. H. A.?

A.—Dr. Raymond E. Selders.

Q.—Did the doctor, that is, Dr. Brown, did he select Dr. Selders?

A.—Yes.

Q.—And did Dr. Brown recommend the salary which should be paid Dr. Selders?

A.—Yes.

Q.—What action did the board of trustees take on his recommendation?

A.—Approved it.

Q.—What other doctors were obtained by Dr. Brown prior to the opening of the clinic?

A.—I am not sure that I can give them to you in the exact order in which they were selected, but Dr. Allan E. Lee was selected by Dr. Brown and Dr. Scandiffio was selected by Dr. Brown. There was a Dr. Hulbert selected by Dr. Brown. The nurses on the staff were selected by Dr. Brown.

Q.—In what field is Dr. Allan E. Lee?

A.—He was a general internist.

Q.—What is that?

A.—Engaged in the general practice of medicine.

Q.—And in what field was Dr. Scandiffio?

A.—He was a pediatrician.

Q.—What is that?

A.—A baby doctor.

Q.—When did the clinic of G. H. A. open?

A.—Officially in Nov. 1, 1937.

Q.—What occurred on the evening prior to the opening of the clinic?

A.—Well, we had a dinner at the Mayflower Hotel.

Q.—That is here in Washington?

A.—Yes.

Mr. Leahy:—I don't like to object but I can't see the materiality of that.

THE COURT:—I can't see the materiality of all these details, in connection with the opening of the Group clinic.

Mr. Kelleher:—I propose to show the materiality by subsequent questions to the witness. I think this is most important, your Honor.

THE COURT:—Will counsel step to the bench?

(Counsel for both sides approached the bench and conferred with the Court, in a low tone of voice.)

By Mr. Kelleher:

Q.—Whom did you mean?

A.—The board of trustees sponsored the dinner.

Q.—Of G. H. A.?

A.—Yes.

Q.—Did Dr. Richard Cabot address the meeting?

A.—Not at the dinner; it was at a later meeting, a separate meeting that he did.

Q.—Who is Dr. Richard Cabot?

A.—He is a very prominent physician from Boston, Mass.

Q.—Is he related to Dr. Hugh Cabot?

A.—Yes, I think so.

Q.—A brother?

A.—Yes.

Q.—Did you invite any of the local doctors to that dinner?

A.—Yes.

Q.—Will you tell us whom you invited?

A.—We invited a number of them, as I recall.

THE COURT:—May I suggest that you merely ask the witness as to the specific persons.

(Mr. Kelleher then asked the physicians specifically invited.)

Mr. Kelleher:—I offer Exhibit 13 for identification in evidence (handing letter to Mr. Leahy).

(Exhibit 13 for identification, Mary G. Lynch to W. F. Penniman, dated Oct. 26, 1937, was received in evidence.)

Mr. Kelleher:—The letter is as follows:

"DR. THOMAS E. NEILL
"1824 Massachusetts Avenue,
"Washington, D. C.

"October 26, 1937.

"Mr. William F. Penniman,
Group Health Association, Inc.,
1328 I Street, Northwest,
Washington, D. C.

"My dear Mr. Penniman:

"Dr. Neill will be unable to attend the dinner at the Mayflower Hotel on October 30, 1937, and has asked me to let you know.

"Very truly yours,
"Mary G. Lynch,
"Secretary to Dr. Neill."

By Mr. Kelleher:

Q.—Mr. Penniman, did you invite the hospitals' representatives to that meeting?

A.—Yes, I think we sent invitations to all the hospital superintendents; the superintendents of all the hospitals.

Q.—Who attended?

A.—Colonel Randall was the only one, I remember.

Q.—With what hospital was he connected?

A.—With the Homeopathic.

Q.—Do you recall whether any of the other hospitals were represented?

A.—I don't recall that any others were there.

Q.—Mr. Penniman, after the clinic had opened on November 1, did Dr. Lee and Dr. Scandiffio tender their resignations to the Medical Society?

A.—Yes.

Q.—Did you have a conversation with Mr. B. B. Sandidge, of the Emergency Hospital, concerning this matter?

A.—I did.

Q.—Who is Mr. Sandidge?

A.—He is the superintendent of the Emergency Hospital.

Q.—Can you place the date of that conversation?

A.—That was shortly after the clinic opened. It must have been around the 10th of November, 1937, around that neighborhood.

Q.—Did you call Dr. Sandidge?

A.—Yes.

Q.—Will you tell us what you told Dr. Sandidge, or Mr. Sandidge?

Mr. Leahy:—I object.

Mr. Kelleher:—On what grounds?

Mr. Leahy:—Pure hearsay.

Mr. Lewin:—Your Honor knows our position with regard to the hospitals; that they were forced into this conspiracy by the defendants.

THE COURT:—Yes, but why reach it by hearsay; why not get it from them?

Mr. Lewin:—We are entitled to get it from someone who came into the conspiracy.

THE COURT:—That is the same question again. I suggest you defer that evidence for the moment, until I rule tomorrow on the question.

Mr. Kelleher:—Your Honor, may I call attention to the fact that the indictment does name the hospitals.

THE COURT:—I understand that; I am quite familiar with the indictment. Let us pass that up until tomorrow morning when I will rule on it.

By Mr. Kelleher:

Q.—All right. Now, did you have a meeting with Dr. Neill in November, 1937?

A.—Yes.

Q.—That is Dr. Thomas E. Neill?

A.—Yes.

Q.—Can you place the date of that?

A.—The latter part of November, about the 25th, 26th, 27th, I think, of November.

Q.—Where was this meeting?

A.—At his office.

Q.—And who was in attendance, in addition to Dr. Neill and yourself?

A.—Mr. Horace Russell.

Q.—Who is Mr. Horace Russell?

A.—He was a member of the board of trustees.

Q.—Of G. H. A.?

A.—Yes.

Q.—Who else?

A.—Mr. Ivan Carson; Mr. R. T. Berry; W. D. Kirkpatrick, Mr. Zimmerman.

Q.—Will you tell the jury the substance of the conversations at that meeting with Dr. Neill?

A.—We called upon Dr. Neill—

Q.—Just a second; I want you only to state the matters you told Dr. Neill and what he said to you.

A.—I told Dr. Neill of the incident that had occurred at the Garfield Hospital, which we thought was pretty terrible; that I had come to talk with him because he was the president of the District Medical Society, and we felt very definitely that he should know about this situation.

Q.—Did you tell him what this situation was?

A.—Yes.

Q.—What did you tell him?

A.—We told him that this patient had been carried to Garfield in a very serious condition.

Q.—Did you tell him the name of the patient?

A.—Yes, I did.

Q.—What was it?

A.—Mary Frances Stuart.

Q.—Who was she?

A.—The laboratorian of Group Health Association. She had been found unconscious in her home and was hurried to Garfield Hospital where it was found that she needed an emergency operation. I told him that while she was in the room waiting there that they had a debate in the corridor of Garfield as to whether or not any doctor could attend her and when and while she was in that condition one doctor made the statement that he couldn't attend this person—he said that in a loud voice—if she was connected in any way with Group Health Association. Dr. Lee, whose patient she was, found out that nothing had been done there, and he told the Group that he was on the courtesy staff of Garfield and he entered her as his patient, and she was operated on. I told Dr. Neill what I thought of such a situation and that I thought the patient should have received better treatment because it was an emergency situation, where time was the essence.

Q.—What did Dr. Neill say?

A.—Dr. Neill said he didn't know anything about it. I don't recall that Dr. Neill gave us any encouragement, because he launched off into another subject, and made the statement to me that if all the members of the Supreme Court and all the members of Congress, if you were to put them all in one room, they couldn't competently select a doctor. I was thereupon forced to reply, "If that is true, Dr. Neill, how in the name of God can a poor layman select the right kind of doctor"?

Q.—Did Dr. Neill know, or did you tell Dr. Neill who the doctor was that was involved in the Mary Stuart case?

A.—Yes.

Q.—What was his name?

A.—Dr. Schoenfeld.

Q.—Now, Mr. Penniman, did you write a latter to Dr. Neill concerning this conference?

A.—Yes.

Q.—And did you receive a reply from Dr. Neill?

A.—I did, yes.

Q.—I show you Government Exhibit No. 13 for identification, which purports to be the original of a letter from you to Dr. Thomas E. Neill, dated Nov. 22, 1937: Does that letter appear to bear your signature?

A.—That is correct; it does.

Q.—Did you mail this letter?

A.—I did.

Q.—I now show you Government's Exhibit No. 14 for identification, which purports to be a letter from Dr. Thomas E. Neill to you, dated Nov. 24, 1937. Is this the letter which you received, and I am referring now to Exhibit 14 for identification.

A.—That is right.

Mr. Kelleher:—I offer Government's Exhibits 13 and 14 for identification, in evidence.

(Mr. Kelleher read letters to the jury, as follows):

"Group Health Association, Incorporated,
"1328 Eye Street, N. W.,
"Washington, D. C.

"November 22, 1937.

"Person.

"Dr. Thomas E. Neill, President,
Medical Society of the District of Columbia,
1824 Massachusetts Avenue,
Washington, D. C.

"Dear Dr.:

"It was good of you to give so generously of your time to the representatives of the Group Health Association, when they called on you at your office on Saturday afternoon.

"It has been my experience that when a group of men are gathered to discuss any subject, varying opinions as to what was said often-times result, notwithstanding the sincerity of all present. Wishing to avoid this in this instance, I have deemed it advisable to confirm in substance the highlights of our discussion as understood by us, as follows:

"1. That the hospitals are maintained for the patient and not for the doctor, therefore, no hospital is justified in refusing admission to any patient in need of hospital care, regardless of race, color or creed, or membership in any association.

"2. That there are at present some 400 doctors, licensed to practice in the District of Columbia, who are not members of the Medical Society of the District of Columbia, some of whom are on the courtesy staff of local hospitals. This confirms our opinion that membership in the District Medical Society by a licensed physician is not a condition precedent to being accepted and placed on the courtesy list of the local hospitals.

"3. That consideration of the applications of duly licensed physicians applying to any of the local hospitals for courtesy privileges is based upon merit and competence of the physician making the application.

"4. That to falsely charge a physician with incompetence subjects the accuser or accusers to suit for libel. This statement was made in connection with your reference to one of our doctors, but whose name you did not wish to disclose.

"Dr. Raymond E. Selders' application for courtesy privileges has been submitted to several of the local hospitals.

"A careful and thorough investigation of Dr. Selders' qualifications was made before his acceptance as a Member of the Medical Staff of the Group Health Association. This included a careful review of his education, and his years of experience. We have checked his record from Texas to Massachusetts and have unqualified statements from physicians with whom he has worked, and in whose integrity we have implicit confidence.

"Both as President of the Medical Society of the District of Columbia and a prominent physician of long standing in this community, it is we think very proper that you should be thoroughly conversant with every activity, the purpose of which is to give medical care, to the end that the highest standard of ethics of the medical profession may be maintained. For this reason, we are delighted to have had this talk with you.

"I also wish to confirm our understanding that what was said by you to us was in confidence and in nowise intended for purposes of publication.

"Sincerely yours,
William F. Penniman,
President."

"The Medical Society of the District of Columbia.
"Washington.

"November 24, 1937.

"Mr. Wm. F. Penniman,
President, Group Health Association Inc.,
1328 I Street, N. W.,
Washington, D. C.

"My Dear Mr. Penniman:

"Thank you for your letter of November 22nd.

"I was very glad to have the opportunity of putting a few facts before the group of men that came to my office with you on Saturday. I think a full understanding of what we must adhere to by you and your committee will save a great deal of unpleasantness in the future.

"I shall be very glad to discuss in person with you any point, under the same conditions.

"I wish to thank you and through you the rest of the men present for the very frank way they expressed their opinions.

"With kind regards,

"Very sincerely yours,
Thomas E. Neill."

By Mr. Kelleher:

Q.—Mr. Penniman, I would like to clear up one thing about the conference with Dr. Neill. Did you tell Dr. Neill how Dr. Schoenfeld happened to get into the Mary Frances Stuart case?

A.—Would you repeat the question?

Mr. Kelleher:—Would you read the question?

(The pending question, as above recorded, was read by the reporter.)

Mr. Leahy:—Would that be material, based wholly on hearsay? Anything he said to Dr. Neill wouldn't be admissible.

Mr. Kelleher:—He went into everything this morning.

THE COURT:—It is just a part of a conversation that is already in.

By Mr. Kelleher:

Q.—Do you understand my question?

A.—Yes. I told Dr. Neill Dr. Schoenfeld was the surgeon who was going to perform the operation and told him Dr. Schoenfeld was ready, but he was the one who made the statement he couldn't do it if she was connected with Group Health Association.

Q.—Did you tell him who had requested Dr. Schoenfeld to operate?

A.—Yes, I told him that Dr. Lee was a member of Garfield Hospital, was on the courtesy staff, and that he and the medical director had arranged for it.

Q.—Did you tell Dr. Neill why Dr. Lee did not himself perform the operation?

A.—Well, I presume I did, because I could very easily have said in the course of this general conversation that Dr. Lee was not a surgeon.

Q.—Why didn't Dr. Selders perform the operation?

A.—Dr. Selders wasn't—

THE COURT:—The question is what the conversation was.

The Witness:—I told him that Dr. Selders had not been admitted to the courtesy staff of the hospital and had gotten Dr. Schoenfeld to do it.

By Mr. Kelleher:

Q.—Did you explain to Dr. Neill who Dr. Schoenfeld was?

A.—Yes.

Q.—What did you tell him?

A.—I told him he was a member of the courtesy staff and was a member of the District Medical Society and that he had called him to perform this operation.

Q.—Mr. Penniman, after Dr. Lee and Dr. Scandiffio had submitted their resignations to the local society, did they take any other action in that regard?

A.—Yes, they—after Dr. Lee had been notified that he was no longer a member—

Mr. Leahy:—I object. Hearsay.

By Mr. Kelleher:

Q.—Would you just tell what those gentlemen did?

A.—They withdrew their resignations.

Q.—They did?

A.—Withdrew it from the District Medical Society.

Q.—Did you attend a hearing of the executive committee of the Medical Society of the District of Columbia on Dec. 6, 1937?

A.—I did.

Q.—What was the purpose of that hearing?

A.—That was the hearing that had been given Dr. Scandiffio and Dr. Lee on charges preferred against them by this C. C. and I. M. Committee of the Medical Society, and they were given the right to this hearing before being expelled from the society.

Q.—And what were the charges against Dr. Lee and Dr. Scandiffio?

Mr. Leahy:—I object. The writing would be the best evidence.

THE COURT:—Yes. I think that is true. If there is a record, I mean, if there are formal charges, they are the best evidence.

By Mr. Kelleher:

Q.—Who was present at this meeting on December 10?

Mr. Leahy:—Tenth or sixth?

Mr. Kelleher:—Excuse me. Thank you, Mr. Leahy.

By Mr. Kelleher:

Q.—December 6?

A.—December 6. Those, I presume, are members of the executive committee of the District Medical Society.

Q.—Will you give us the names of those you recall who were there? Let us go over the list of names.

Mr. Leahy:—Let him tell first.

The Witness:—Well, it was Dr. Reede who served as chairman, I think.

(Mr. Penniman listed the names of those who were present.)

A.—Well, there were three attorneys, Mr. Fenning, Mr. Hoover, and Mr. Leahy, the gentleman over there (indicating).

Q.—Whom did they appear for?

A.—Well, I imagine they represented the District Medical Society.

Then there was Dr. Scandiffio and there was Dr. Lee.

I was there; Mr. Zimmerman, Dr. Brown; there was Mr. Luke Keeley, Mr. Horace Russell, Mr. E. K. Newman.

Q.—Mr. York?

A.—And A. S. York, yes, sir.

Q.—Who appeared as counsel for Drs. Lee and Scandiffio?

A.—Russell, Keeley, Newman and York.

Q.—What occurred at this meeting on December 6? Did anybody testify?

A.—I think Dr. Lee was on the witness chair most of that meeting.

Q.—And was he examined by counsel for the Society?

A.—Yes.

Q.—Were the hearings transcribed by a reporter?

A.—Yes.

Q.—How long did the first session last?

A.—I think until—it started about 8 o'clock and I think it adjourned about 11:30.

Q.—Before adjournment was a date set for another hearing?

A.—Yes. They set—I think that was Monday, and I think they set the following date for Friday the 10th, December 10.

Q.—Yes. Now, you have told us that Dr. Lee testified at this hearing. Did you see Dr. Lee early in the week of the first hearing?

A.—Subsequent to the first hearing?

Q.—Yes.

A.—Yes, Dr. Lee was in my office.

Q.—Will you describe his appearance, please?

Mr. Leahy:—I object as immaterial.

THE COURT:—Objection sustained.

By Mr. Kelleher:

Q.—Did you talk with Dr. Lee?

A.—Yes. Yes, I did. At length. Dr. Lee was quite perturbed.

Mr. Leahy:—You answer the question.

THE COURT:—Just answer the question.

By Mr. Kelleher:

Q.—Did you talk to him about the expulsion proceedings?

Mr. Leahy:—I object as immaterial.

THE COURT:—Sustained.

Mr. Kelleher:—Your Honor, this is offered on the same ground as this other conversation which your Honor is considering. I suppose you will reserve your final ruling?

Mr. Leahy:—This isn't on the same ground at all.

Mr. Keller:—Yes, it is.

Mr. Leahy:—You now want to make Dr. Lee a defendant. You will have the jury in it pretty soon.

Mr. Lewin:—I don't think that is a proper expression.

Mr. Leahy:—Any counsel who has tried five cases ought to know it is absolutely inadmissable on the ground of hearsay.

THE COURT:—I sustained the objection, so I don't see what the argument is about.

Mr. Leahy:—I don't either.

THE COURT:—These personal tilts before me don't convince me one way or the other as to the admissibility of evidence. They are not very helpful.

By Mr. Kelleher:

Q.—Did you see Dr. Lee later in the week?

Mr. Leahy:—I object as immaterial.

Mr. Kelleher:—I am just asking him whether he saw him.

THE COURT:—Well, it is immaterial. Objection sustained.

Mr. Kelleher:—Your Honor, I do believe the second meeting may be admissible for another reason, if I could pursue the inquiry with Dr. Lee and the witness.

THE COURT:—Well, if counsel want to object, perhaps you had better come to the bench. I will be glad to listen to you.

By Mr. Kelleher:

Q.—Mr. Penniman, did you see Dr. Allan E. Lee on the afternoon of Friday, December 10?

A.—Yes.

Q.—Did Dr. Allan E. Lee make a telephone call in your office?

A.—Yes.

Q.—Did you hear him make that call?

A.—I did.

Q.—Whom did he call?

A.—Dr. Hooe.

Q.—Is that Dr. R. Arthur Hooe?

A.—That is correct.

Q.—Did you attend a meeting of the executive committee of the District Medical Society that evening?

A.—I did.

Q.—When you came into the building where the meeting was being held, did you see Dr. Lee talking with anybody.

A.—I saw Dr. Lee in the corridor.

Q.—With whom was he talking?

A.—Dr. Hooe.

Q.—Did you watch Dr. Lee talking with Dr. Hooe?

A.—Well, I observed it. I made no attempt to listen to what was said. I observed that the two were talking.

Q.—You didn't hear the conversation?

A.—No, I did not.

Q.—What occurred after the conversation between Dr. Lee and Dr. Hooe?

A.—Dr. Hooe went back in some little office right off the corridor, and shortly thereafter asked Dr. Lee to come in the room.

Q.—Did you see Dr. Hooe come back out of the room?

A.—Yes.

Q.—Did he beckon Dr. Lee to come in?

A.—Told Dr. Lee to come in, and he followed.

Q.—After you saw Dr. Lee go into the room with Dr. Hooe what occurred?

A.—He shut the door.

(There was laughter in the courtroom.)

THE COURT:—Now, possibly some of you haven't been here before, but those in the audience please understand, I think it better not to laugh. Suppress your feelings, please.

By Mr. Kelleher:

Q.—Did the executive committee meeting commence after that?

A.—Yes.

Q.—What occurred at the start of the meeting?

A.—Dr. Hooe, as I recall it, made the statement to the chairman of the executive committee that Dr. Allan E. Lee, having now tendered his resignation to Group Health Association, the C. C. and I. M. Committee recommended withdrawal of the charges, and I think it was put to a vote of the executive committee and they voted to withdraw the charges and reinstate Dr. Lee.

Q.—Who made this statement to the executive committee?

A.—Dr. Hooe was chairman of the C. C. and I. M. Committee.

Q.—Yes, but who announced this to the executive committee?

A.—I don't recall just who did it. I was present, I heard it made, heard the statement made.

Q.—What occurred at the second meeting?

A.—They—I think the second meeting they put Dr. Scandiffio on the stand.

Q.—When did you testify?

A.—I think mine was the third.

Q.—When was the third meeting held?

A.—Well, that was—the following week—sometime during the following week. This being Friday the 10th—I don't remember the exact date.

Q.—Did Dr. Brown testify at any of these hearings?

A.—Yes. Yes, he did.

Q.—Did you attend any other hearing of the executive committee after the third hearing?

A.—No. I was out of the city.

Q.—Mr. Penniman, did you write and mail any communications to any of the Washington hospitals concerning staff privileges for the medical staff of G. H. A. or any of its members?

A.—Yes.

Q.—Did you address a communication to the president of Homeopathic Hospital?

A.—Yes.

Mr. Kelleher:—Will you mark this for identification?

(A letter dated Nov. 8, 1937, from William F. Penniman to Col. Joseph Randall, was marked Government Exhibit 15 for identification.)

Mr. Kelleher:—And this.

(A letter from J. B. Gregg Custis to William F. Penniman, dated Nov. 9, 1937, was marked Government Exhibit 16 for identification.)

By Mr. Kelleher:

Q.—I show you here Government Exhibit 15 for identification, which purports to be a carbon copy of a letter from you to Col. Joseph Randall, President of the Board of Trustees, Homeopathic Hospital, dated Nov. 8, 1937. Is this a carbon copy of an original letter which was written and mailed by you?

A.—That's right.

Q.—Did you receive a reply to that letter of Nov. 8, 1937?

A.—Yes.

Q.—Is this the reply which you received (indicating)?

A.—Yes.

Mr. Kelleher:—I offer Government's Exhibits 15 and 16 for identification, in evidence.

(Counsel examined paper.)

Mr. Burke:—Exhibit 15 is a carbon copy dated Nov. 8, 1937. Exhibit 16, an original letter dated Nov. 9, 1937 from J. B. Gregg Custis, M. C., Executive Officer, Board of Trustees, National Homeopathic Hospital, to Mr. Penniman.

Mr. Leahy:—Show that to the Court.

May we just approach the bench for a moment, your Honor?

THE COURT:—Yes.

Mr. Kelleher (reading):

"November 8, 1937.
"Col. Joseph Randall, President,
Board of Trustees,
Homeopathic Hospital,
3146 19th Street, N. W.,
Washington, D. C.

"Dear Col. Randall:

"For your information, I am attaching hereto a copy of a letter addressed to the Homeopathic Hospital requesting permission to admit patients who are members of the Group Health Association to the hospital upon the request of the Medical Director.

"Also, a request to permit Dr. Raymond E. Selders, Surgeon, who is attached to the staff of the Group Health Association, to attend these patients while hospitalized.

"For your further information, there is attached a record of Dr. Selders' education, training and experience.

"Your assistance in obtaining prompt and favorable action will be very much appreciated.

"Very truly yours,
William F. Penniman,
President."

"Mr. William F. Penniman,
Group Health Association, Inc.,
1328 Eye Street, N. W.,
Washington, D. C."

It is on the letterhead of the National Homeopathic Hospital. (Reading:)

"My dear Mr. Penniman:

"At a Board of Trustees Meeting held on November 4, 1937, it was voted that until the Group Health Association, Inc. was approved by the Medical Society of the District of Columbia, the National Homeopathic Hospital could not make any contract or enter into any agreement with it.

"Very truly yours,
(signed) J. B. Gregg Custis, M.D.,
Executive Officer, Board of Trustees."

By Mr. Kelleher:

Q.—Mr. Penniman, in writing to these hospitals did you intend to take any arrogant attitude toward the hospital?

Mr. Leahy:—I object.

THE COURT:—Objection sustained.

By Mr. Kelleher:

Q.—Mr. Penniman, did you, as you state in this letter, also address a letter to the National Homeopathic Hospital?

A.—Yes, sir.

(Mr. Penniman stated he had addressed letters to all the hospitals.)

(Original letters and copies of letters from Penniman to various hospitals and officers of various hospitals were marked U. S. Exhibits Nos. 17 to 29, inclusive, for identification.)

Mr. Kelleher:—Your Honor, I am now through with the matters that your Honor will permit us to go into at this time, but I would like to reserve the right to recall Mr. Penniman.

THE COURT:—Yes. That may be done.

Mr. Kelleher:—That is all, Mr. Leahy.

Mr. Leahy:—May I ask one of the Deputy Marshals to telephone the reporters' office to return certain exhibits that were removed from the court room?

THE COURT:—Yes.

CROSS EXAMINATION

By Mr. Leahy:

(Mr. Penniman went over again the record of his various positions.)

(He was interrogated as to his relationship with Mr. Zimmerman and various conferences that were held.)

Q.—What was the occasion of your first seeing any member of the District Medical Society with reference to G. H. A.?

A.—At the time we visited them at the Society's headquarters.

Q.—That was sometime following the receipt of this letter from Dr. Verbrycke, was it not?

A.—I think it was.

Q.—At the time you received this letter you were president, were you not, of G. H. A.?

A.—That is correct.

Q.—Had you as president of G. H. A. attempted to contact the Medical Society of the District of Columbia in any way before the receipt of this letter?

A.—Not officially; no.

Q.—Unofficially?

A.—No.

Q.—In no way had you tried?

Mr. Lewin:—He told you about the Neill visit. It is confusing. The questions have got to be based on the evidence. This gentleman has already testified that he went to see Dr. Neill at Mr. Childress's home before this meeting.

THE COURT:—That evidence is there.

Mr. Lewin:—Yes; but now the question is phrased on an entirely different supposition, which is not correct.

THE COURT:—He has a right to phrase it on a different supposition.

Mr. Lewin:—He cannot misquote the evidence, can he?

THE COURT:—I do not know that he is misquoting it. If the witness misunderstands the question, then it can be clarified on direct examination. I think that is the better way.

By Mr. Leahy:

Q.—Will you answer the question?

A.—The last question I do not get. You said, "Unofficially?" and I said, "No." Not the District of Columbia Medical Society; no.

Q.—Had you contacted anybody who was officially connected with the District Medical Society, before the receipt of this letter?

A.—I think so. I think I had an interview with Dr. Neill. He was connected with the District Medical Society.

Q.—Can you tell us the date of that visit?

A.—As near as I can recall, sir, it was in April or May; I am not sure.

Q.—Did you make any memorandum of that visit?

A.—I don't think so; no. It was a very informal visit at Mr. Childress's home, and we just had an informal discussion with Dr. Neill.

Q.—Mr. Childress was the assistant to Mr. John H. Fahey, Chairman of the Board, was he not?

A.—That is correct.

Q.—And he was interested also in Group Health Association?

A.—He was interested; and Dr. Neill was quite a close personal friend of his. He offered that as a suggestion.

Q.—Had you ever met Dr. Neill personally before that occasion?

A.—I don't believe I had.

Q.—Had you discussed him with Mr. Childress?

A.—Oh, yes.

Q.—It was at Mr. Childress's suggestion, then, that you went up to see Dr. Neill?

A.—It was at Mr. Childress's suggestion that Dr. Neill met us at his home.

. . . . . .

Q.—Group Health had been incorporated on Feb. 24, 1937, had it not?

A.—I think so; yes.

Q.—Had its by-laws been published shortly after that time?

A.—Yes.

Q.—Those by-laws purport in a general way to determine the contract between the subscriber to the service and the service which Group Health rendered? Is that right?

Mr. Lewin:—We have the by-laws in evidence.

By Mr. Leahy:

Q.—Had they been printed shortly after the incorporation?

A.—Yes.

Q.—Many copies printed?

A.—Yes; we had quite a number of them.

Q.—You had distributed them, had you not, among the membership?

A.—With the membership; yes.

Q.—Do you recall about how many you had distributed?

A.—Our membership at that time was around 900, and I think each one had a copy of the by-laws.

Q.—When Mr. Childress asked you to meet Dr. Neill at his home that night did you know that you were going at that time to discuss with Dr. Neill the possibility of his being asked to become the Medical Director of Group Health?

A.—Oh, absolutely. That was the purpose of the meeting.

Q.—Did you bring a copy of the by-laws with you?

A.—I don't remember whether we had them or not.

Q.—Did anyone in the group bring a copy of the by-laws?

A.—I don't recall.

Q.—Did any one of the group leave a copy of the by-laws with Dr. Neill so that he could read them?

A.—That I don't recall.

Q.—Did you not think, if you were going to see a person who was to be employed as Medical Director, you should give him the by-laws which constituted the contract for the service that was to be rendered?

A.—I feel that perhaps Dr. Neill should have asked for a copy of the by-laws. I don't recall that he did. If he were going to become the Medical Director he would have wanted to see a copy of the by-laws, I think.

Q.—Do you recall whether he asked for one now?

A.—I don't recall that he did.

Q.—But your best recollection is that no one left one with him?

A.—That is my best recollection.

(The witness was closely interrogated as to the details of the conversation with Dr. Neill.)

Q.—Did you indicate to him that you had the money available at that time to buy the equipment?

A.—No; I don't believe we did. I don't remember that particularly.

Q.—You already had the money, had you not?

A.—I am not sure just when the money was made available. I think the money was made available sometime in March of 1937. I cannot tell you whether it was just prior or subsequent to the availability of the money that I met with Dr. Neill.

Q.—At all events, nothing was said about that point, in accordance with your best recollection?

A.—No. I don't think the question was raised at all.

(The witness was questioned on the letter from Dr. Verbrycke.)

Q.—The Central Admitting Bureau? Did you know about that?

A.—I am not as familiar with that. I know there is a Central Admitting Bureau.

Q.—And the Physicians and Dentists Service Bureau?

A.—I don't know that at all.

Q.—(Reading):

"And the approval and help of the Society has been a vital factor in the success of these organizations." Did you know that the Medical Society had cooperated in the formation and continuation of those organizations?

A.—No; I did not.

Q.—(Reading):

"May I ask, since your association so deeply affects health problems in the city, that you will be good enough to submit a copy of your charter and by-laws with a copy of the contract with your members."

Did you ever submit a copy of the charter?

A.—No, sir.

Q.—Was that contained in the copy of your by-laws?

A.—No. That was explained to him over the telephone—that if he wanted the charter, that was a matter of public record. It had been filed, and he had no difficulty in seeing that.

Q.—Did you have a copy of your charter available?

A.—I did not. The secretary of the association may have had it. I personally did not.

Q.—You had available copies of the by-laws?

A.—Oh, yes. We had plenty of them.

Q.—You could have mailed him a copy of the by-laws in accordance with his request, could you not?

A.—Surely, without any trouble at all. I told him over the telephone, however, that there had been some nine hundred

copies distributed, and I thought he would have no difficulty. As a matter of fact, we had already heard that a number of the copies were already in the hands of the doctors.

Q.—Did you have any particular reason why you did not accede to the request of Dr. Verbrycke as chairman of the Committee on Economics of the Medical Society of the District of Columbia?

A.—None whatsoever, except that if I am not mistaken it was during the course of this conversation that we asked him to permit us to come over and talk to the District Medical Society. I am not so sure—it is a little vague, but I think it was in this telephone conversation that arrangements were made for representatives of Group Health to visit the District Medical Society and some of its members.

Q.—When you visited the District Medical Society in accordance with that arrangement, which you think may have been made over the telephone at that time, did you bring the by-laws with you then?

A.—I don't know that we had them.

Q.—Did anybody in your group bring the by-laws?

A.—I think they may have had a copy. It was just a small pamphlet.

Q.—But did you bring them?

A.—I did not purposely bring them; no.

Q.—Did Dr. Brown bring them?

A.—I could not answer that.

Q.—Did you see him give a copy to anybody at the meeting?

A.—No.

Q.—They were asking about a copy, were they not?

A.—Not at the meeting.

Q.—Were they not discussing the by-laws or the contract at that meeting?

A.—I don't think so. I think I made the first statement and gave a general outline, and I think that then there were some questions asked. I think Dr. Neill asked some questions with reference to the by-laws which I endeavored to answer to the best of my ability.

Q.—Was not the District Society, through the chairmen of some of its committees, trying to get a copy of those by-laws as late even as July 15?

A.—That is right.

Q.—Why didn't you supply them with a copy, Mr. Penniman?

A.—Because he could get all the copies he wanted.

Q.—He could go and get them himself? Was that the spirit?

A.—I don't know that that was intended to be the spirit; but the idea was that we felt they had plenty of them. They had some of the copies.

Q.—Did you supply them with a list of the members of G. H. A.?

A.—No.

Q.—But you would expect Dr. McGovern, who was writing to you on July 15—

A.—Did he ask for a list?

Q.—He asked for a list.

A.—For a list of the members?

Q.—No; he asked for a copy of your by-laws.

A.—But you said, a list of the members.

Q.—How would he know who was a member of the G. H. A.?

A.—He didn't ask for that.

Q.—Did you tell him?

A.—No.

Q.—You told him that you had distributed 900 copies of by-laws among 900 Government clerks, but you did not tell him what 900 out of the 100,000, did you?

A.—No, because we had heard that some of the doctors had them. We had gotten reports back that some of the doctors had them and had discussed it; so it was not anything that was secretive.

Q.—At all events, up to this time you have not supplied the District Medical Society with a copy of your by-laws?

A.—I have not, personally.

Q.—Have you ever supplied the District Medical Society with a copy of the contract?

A.—Just what contract do you refer to?

Q.—The contract with the Home Owners Loan Corporation which was asked for on July 15, under Exhibit 12.

A.—No, sir.

Q.—Have you ever supplied the District Medical Society with a copy of your adopted constitution?

A.—The by-laws?

Q.—Yes.

A.—No; I have not.

Q.—Have you ever supplied a copy of the form or forms of application for membership?

A.—No.

Q.—Have you ever supplied any form of contract or agreement setting forth the service to be rendered to members and their dependents?

A.—That would be all in the by-laws.

Q.—So your answer is that you have never supplied that information, either?

A.—I did not.

Q.—You will note under Exhibit 12 that Dr. McGovern was asking for the information in his official capacity as chairman of the executive committee. Is not that true?

A.—I think so.

Q.—And Dr. McGovern had written on the stationery of the Medical Society of the District of Columbia?

A.—That is right.

Q.—Whereas, in Exhibit No. 11, Dr. Verbrycke wrote on his personal stationery; nevertheless, he signed the request, did he not, in his official capacity as chairman of one of the committees?

A.—That is right.

(The witness was then closely interrogated on the conversation with Dr. Neill.)

Q.—Of course when you outlined the plan of G. H. A., that outline did not convey the information that it was a prepayment service?

A.—Oh, yes.

Q.—Did Dr. Neill object to the prepayment notion?

A.—There was no indication during the evening's conversation that he objected to it.

Q.—He advised you that he and his partner were engaged in some form of contract practice with the Potomac Electric Power Company?

A.—I am a little vague about that; either that he was or his partner was; but I am not sure just which it was. There was some reference to it.

Q.—With one or two organizations of contract practice in the District of Columbia?

A.—Yes.

Q.—Did he say anything to you in substance that you can recall to this effect, Mr. Penniman, that if the G. H. A. were economically sound, if it were ethically and legally sound, the job which you were offering him was just the job he was looking for?

A.—To the best of my recollection there was no question at that time brought up about the legality of Group Health. I don't believe that was in question at all.

Q.—Did he say anything to you in substance to the effect of the question which I have just put to you?

A.—Not with respect to legality, that I remember.

Q.—Did he say anything with reference to the ethical side of it?

A.—I cannot recall that he did. The remark that he made as he was leaving was that he had to leave because of some engagement—I think it was a patient—and that his further action would have to depend upon the attitude of the District Medical Society. I think that is about the last remark I remember his making. I don't remember his saying anything about legality or the ethics of it. He did say that he saw nothing wrong with it, and that there were other practices such as he was interested in.

Q.—Do you recall at the time that he left you with any indication that he would talk with you further about it?

A.—I think we got the impression that he would, because he said it would depend upon the attitude of the District Medical Society. Naturally he did call attention to the fact that he was becoming its president on July 1st.

Q.—Did you ever get in touch with him again about it?

A.—I don't know that I did.

Q.—Do you know anybody who did, representing the G. H. A.?

A.—No, I do not. I think we were waiting for a call from him.

Q.—Mr. Childress never spoke to you about the matter again, did he?

A.—He may have, in just general conversation, wanting to know what progress we were making.

(Mr. Penniman was questioned about the brochure issued by G. H. A., Inc. and the first meeting with the District Medical Society.)

Q.—So, at the outset you assured them that you wanted to give them full information about the organization?

A.—Yes.

Q.—Then why didn't you do it?

A.—We did, that evening. We discussed the by-laws. I gave them—so far as the charter is concerned, I did not give them that.

Q.—You did not give them the by-laws or the charter or the contract under which they were to function?

A.—There was no objection to giving them the by-laws or copy of the charter, if they did not already have it and if it were not obtainable. But so far as the contract that existed between Group Health Association and the Federal Home Loan Bank Board was concerned, I made it pretty clear that that was something we had no authority to give. That had to come from the Board itself.

Q.—Did you advise the Board that the District Medical Society would like to see a copy of the contract?

A.—I don't recall that I did, sir.

Q.—Did you make much effort to make good your assurance, which you gave the Executive Committee that night, that you wanted them to have full information about this matter?

A.—Just as I am giving full information now. I am trying to answer all the questions and go into as much detail with the purposes of the Association as is possible.

Q.—You knew all the answers were contained right within those by-laws?

A.—I knew the by-laws.

Q.—And you knew those answers were right inside those by-laws?

A.—Yes.

Q.—Then why did you not give them?

A.—They had the by-laws.

Q.—Did you see a copy of the by-laws at that meeting?

A.—No.

Q.—Why do you make the statement to the jury that they had a copy of the by-laws?

A.—Because we had gotten reports from several of the members that they had given copies to the doctors.

Q.—To whom?

A.—To local doctors here.

Q.—Can you say now to this jury that a single member of the Executive Committee whom you met there that night had ever had a copy of your by-laws?

A.—No; I could not, because I did not see them have it.

Q.—Even assuming that they had it, don't you think, in accordance with the assurance which you extended the Executive Board in the spirit of cooperation, that you ought to have given them a copy of the by-laws?

Mr. Lewin:—Your Honor, we think this has gone far enough, and we object.

THE COURT:—That is argumentative.

What is the next question, please.

By Mr. Leahy:

Q.—Mr. Penniman, there was quite a discussion back and forth there, was there not, about the possibility of Group Health economically succeeding on the dues which you stated?

A.—That evening?

Q.—Yes.

A.—That is correct.

Q.—And somebody there pulled out a piece of paper and started figuring on the table?

A.—I think they did; yes.

Q.—Who was that?

A.—I am not sure. I think it was Dr. Groover. I am not sure. I know some one did.

Q.—Was he not trying to figure on the table, while you all were there, whether or not on dues of $2.20 per member or $3.30 as family dues, that organization could give medical service at that price?

A.—That is right. He had it all figured. He was figuring the whole evening.

Q.—Did there not come a time when he said that he knew that medical service of good quality could not be rendered at that price?

A.—I think he expressed that as his opinion.

Q.—Did there seem to be others in the group who expressed the same opinion?

A.—I don't recall. I recall this one gentleman took a very active part in reading off his figures and indicating that it would not do. But it has been done and it is now operating.

Q.—It has not been done on dues, has it?

A.—Yes.

Q.—Has it, Mr. Penniman?

A.—Except for the purchase of equipment.

Q.—How big an exception was that?

A.—$40,000.

Q.—How big an exception did you make otherwise?

A.—How big an exception other than dues?

Q.—Yes.

A.—None.

Q.—Any contributions from any other association?

A.—From other associations?

Q.—Yes.

A.—No; not that I know of.

Q.—None from the Good Will Fund?

A.—No.

Q.—None from any other association?

A.—None that I know of.

Q.—Who paid the salary of the administrator from August 1938?

A.—That was beyond my time. I don't know what the contract was.

Q.—You were still president, you said, until September or October 1937?

A.—Yes.

Q.—I mean, until 1938.

A.—Oh, no.

Q.—Were you a member in 1938?

A.—Yes.

Q.—Were you on the board of trustees in 1938?

A.—Yes.

Q.—But you do not know who paid the rent on the office occupied by the administrator for Group Health?

A.—After I assumed this new position—

Q.—Just answer that question, please.

A.—No; I don't know what the contract was.

Q.—You knew you were not paying his salary?

A.—I didn't pay any of the salaries.

Q.—I mean, Group Health.

A.—I don't know what arrangements were made. I didn't see the contract.

Q.—Do you know Mr. Taylor?

A.—Oh, very well.

Mr. Kelleher:—Your Honor, I think we have gone far enough with this. It is exactly the sort of thing that your Honor ruled on yesterday. The witness has gone into it far enough.

THE COURT:—He says he does not know anything about the terms of the employment. He said so very definitely. If I misinterpret him he can correct me.

The Witness:—That is correct, your Honor.

By Mr. Leahy:

Q.—See if I understand correctly. You did know that he was the administrator of G. H. A.?

A.—Yes.

Q.—You did know he had a separate office?

A.—Yes.

Q.—But you do not know who paid his salary or who paid the rent?

A.—I would not go so far as to say that. I would not know who paid his salary. I heard that some arrangement had been made, but the details of it I could not tell you about.

Q.—I am not asking for details, but just a broad answer. Who was it you heard paid his salary?

Mr. Kelleher:—Objection, your Honor, as incompetent.

THE COURT:—He may answer that.

A.—I don't believe I can answer, except from hearsay.

By Mr. Leahy:

Q.—You do not want to answer it?

A.—I would answer it in a minute, sir, if I had the information.

THE COURT:—Put your next question.

By Mr. Leahy:

Q.—The meeting on June 24, 1937, Mr. Penniman—do you recall about when it broke up?

A.—Well, I think it lasted for a couple of hours. We went there about 8 o'clock and it was about 10 when we left.

Q.—You were all friendly when you dispersed, were you not?

A.—Yes, very.

Q.—The discussion you had was back and forth as to different notions of what could and what could not be done?

A.—Very friendly.

(Mr. Penniman was next interrogated on the luncheon with Mr. Zimmerman and Dr. McGovern; also the meeting with the District Medical Society.)

By Mr. Leahy:

Q.—You did invite Mr. Zimmerman to the luncheon, did you not?

A.—Yes.

Q.—Did you tell Dr. McGovern you were going to have Mr. Zimmerman present?

A.—I certainly did.

Q.—Are you sure about that?

A.—Yes, sir; quite sure.

Q.—What did you talk about—horses and dogs?

A.—Well, yes; talked horses and dogs, and we were going to play golf together. We talked about Group Health.

Q.—Did you talk anything about Group Health?

A.—Oh, yes, as near as I can recall.

Q.—Did Dr. McGovern talk to you about the request contained in the letters?

A.—He did.

Q.—Did he ask for a copy of the by-laws?

A.—He may have, sir, during the course of a very general friendly conversation; he may have said it.

Q.—Did you tell him to go get a copy from one of your 900 members whom you did not name?

A.—Not in that way; no.

Q.—Did he ask you for a copy of the contract under which you would render service to your members or subscribers?

A.—It would be in the by-laws.

Q.—Did he ask you for a copy of the contract under which you would obtain funds?

A.—I think he did, or in his letter. I think he brought the question up, as I recall.

Q.—What did you say to him?

A.—Practically the same thing that I had said to Dr. Verbrycke, as near as I can remember. I told him that I could not give him the contract, because I did not have the authority to give it, but if they wanted the charter it was a matter of record and they could get that; and that there were copies of the by-laws that had been pretty generously distributed and there would be no difficulty in his getting them.

Q.—Did you ascribe as the reason why you could not accede to his request for a copy of the contract the fact that you had no authority to give it to him?

A.—A Federal Home Loan Bank Board contract; yes.

Q.—Did you say anything, in substance, to this effect, Mr. Penniman, not that you did not have any authority to give the contract, but that he, Dr. McGovern, or nobody else had any right to see it any more than he would have a right to see a contract between the owner of a department store and an express company, if any such existed?

A.—I can't remember that. It may have come up in the conversation, but I don't specifically remember that statement at all.

Q.—Did you make any memorandum at all of this conversation that you had with Dr. McGovern?

A.—No; I didn't think it was necessary. It was a very friendly gathering. I didn't take notes and put them in my pocket.

Q.—But, at all events, Dr. McGovern left without getting the information he had asked for?

A.—Yes; but with an explanation.

Q.—The explanation which you have just given us; is that right?

A.—Yes; that is right.

. . . . . .

Q.—Did not Dr. McGovern tell you at this meeting that the committee could not intelligently discuss G. H. A. with you unless you supplied them with the information he asked for?

A.—He may have; I don't recall specifically.

Q.—I ask you to look at Dr. McGovern's letter, and I ask you if that is not the reason why he asked you to supply him with the information, so he could intelligently talk to you about it?

A.—He says he is unready to discuss it intelligently.

Q.—He states on July 15, does he not, that at the recent meeting held in the Medical Society Building, when you, Mr. Zimmerman, and Dr. Brown were present and discussed the plans and purposes of your organization, "you were kind enough to say that your board of trustees would receive a committee from the society for further discussion. The committee of the Society having this matter in charge finds itself unready to discuss the matter intelligently with you without further information. I am therefore directed to request," and so forth. You knew, then, the purpose of his request from that letter?

A.—Yes. I think we knew the purpose.

Q.—You mentioned one other occasion when I think you said you saw Dr. Neill, Mr. Penniman. Can you give me the date on which you saw him?

A.—At his office?

Q.—Yes.

A.—I think it was in November.

Q.—On the occasion of that visit you went up there with several members of the board of trustees, did you not?

A.—That is correct.

Q.—How many did you take along with you on that occasion?

A.—I took as many of the board as we could find. I mentioned their names.

Q.—Some five or six?

A.—I think so; yes.

Q.—Did you go up to Dr. Neill's office to discuss the case of this young lady who had been admitted to Garfield Hospital and operated on by Dr. Schoenfeld?

A.—Yes.

Q.—Is that the purpose you went there for?

A.—That is the purpose.

Q.—Why didn't you say something about it in the confirmation of your visit and in that letter?

A.—We did not discuss that question at all. He said he did not know anything about it; and then we got off of the subject and on to how poor the hospitals were in Washington, and about the selection of the medical staff, and then I asked a specific question by which I wanted to refresh his mind for the record—

Q.—If I am wrong, please correct me. I thought you stated that the purpose of the visit of yourself, together with as many of the members of the board of trustees as you could get, was to go to Dr. Neill about this incident at Garfield Hospital.

A.—That is right.

Q.—The very next day you wrote a letter as to what occurred there, did you not?

A.—Not altogether; not all of it. I only gave the highlights.

Q.—But the purpose no longer constituted a highlight for the purpose of this letter?

A.—Because Dr. Neill told us he did not know anything about it.

Q.—Answer the question. Did that constitute any highlight for the purpose of this letter?

A.—It is not so incorporated in there.

Mr. Lewin:—Let him complete his answer. He was in the middle of his answer when Mr. Leahy cut him off.

Mr. Leahy:—I did not want to cut him off. If I do, you hold me up. I get anxious to go ahead.

The Witness:—Maybe the witness is a little slow.

Mr. Leahy:—I am sorry, Mr. Penniman.

The Witness:—The real purpose was—it was arranged the very next day after the incident at Garfield that we go up for the purpose of discussing that case, and of course after we discussed it or started to talk to him about it and told him that as the president of the District of Columbia Medical Society we thought he ought to know about a thing of that kind, he said he did not know anything about it and had not heard about it; and I am inclined, as I recall now, to think that he said that he would look into it and would find out, that he had not heard about it. Then we got on to a very interesting subject, the specific question as to whether or not hospitals were operated for the patients or the doctors, and answers to specific questions, the fourth one, I think, on the last page, with reference to falsely charging a physician in a suit for libel. That statement was made by Dr. Neill; he made that point. So they were just highlights of the subjects we discussed that I put into the letter.

By Mr. Leahy:

Q.—Why did you consider it necessary to write to Dr. Neill a résumé of what you considered to be the highlights of the discussion?

A.—Did I start off in the beginning of the letter by stating my reasons?

Q.—Yes; you did. You said:

"It was good of you to give so generously of your time to the representatives of Group Health Association when they called on you at your office on Saturday afternoon. It has been my experience that when a group of men are gathered to discuss any subject varying opinions as to what was said often times result, notwithstanding the sincerity of all present. Wishing to avoid this in this instance I have deemed it advisable to confirm in substance the highlights of our discussion as follows"—

And then you related them.

A.—That is correct.

Q.—Did you personally make this appointment to see Dr. Neill?

A.—I think I did.

Q.—What did you tell him when you called him up?

A.—I told him we wanted to come up to see him.

Q.—What else?

A.—I think he said he would be glad to see us. He was very nice about it.

V 19

Q.—Did you ask to see him officially, in his official capacity, as president of the Medical Society?

A.—No; I don't think so.

Q.—Was anything said about that?

A.—I don't think so. At the time we called up Dr. Neill he was certainly very gracious, and we told him we would like to come up to see him about a matter, and he said to come on up.

Q.—Let me see if I can refresh your recollection. The day that you saw Dr. Neill was a Saturday, was it not?

A.—That is correct.

Q.—This was a Saturday afternoon you asked to see him?

A.—Yes.

Q.—And when you called up he said, all right, he would forget about its being Saturday afternoon and stay right there and would be glad to see you?

A.—He was very nice about it; yes.

Q.—Did he say that this is "off the record and not official and not to be publicized?"

A.—Yes.

Q.—And the meeting in his office was then supposed to be a chat between you and him—and when I say "you," I mean you and your group, not in any official capacity at all, but just as gentlemen sitting around the table and discussing a subject about which gentlemen might disagree. Is that right?

A.—That is right.

Q.—And there was not supposed to be any publicity about it whatsoever, was there?

A.—No.

Q.—That is what you meant, was it not, when you wrote in your letter the next day:

"I also wish to confirm our understanding that what was said by you to us was in confidence and in no wise intended for the purpose of publication."

A.—That is right.

Q.—Why did you think it was necessary, in a confidential chat which was supposed to be off the record, between you gentlemen, and not in your official capacity, to make a record which could be produced?

A.—I was careful to send it to him under personal cover.

Q.—Did you keep a copy?

A.—Yes, in my personal files.

Q.—Was there any reason for that?

A.—I said it was not for publication, and it has never been published.

Q.—It has not been published now, has it, according to your idea of publication?

A.—I don't believe so.

Mr. Lewin:—This witness was required by the Government of the United States to appear here under subpoena to testify.

Mr. Leahy:—Was he required to keep a copy in his files so that he would know about it?

Mr. Lewin:—He was required to bring all relevant documents that bore on this charge.

By Mr. Leahy:

Q.—Did you keep a copy that you made of this letter in the official files of G. H. A.?

A.—I don't think we did. I think I kept it in my own personal files.

Q.—How did the prosecution get hold of the copy?

A.—I didn't give it to them. I don't know how they got it.

Q.—You don't know how they got this (indicating)?

A.—Is not that the original?

Q.—Yes.

A.—I don't know how they got the original.

Mr. Lewin:—That was subpoenaed from the District Medical Society.

By Mr. Leahy:

Q.—If this was a confidential chart, not for purposes of publication and not in your official capacities, how did you address your letter to him as president of the District Medical Society, and address it to the office of the Medical Society of the District of Columbia?

Mr. Lewin:—We object to that as incompetent, irrelevant and grossly immaterial.

THE COURT:—The witness has said that it was a confidential chat between these gentlemen. If there are circumstances which might bear on that statement, I think they have a right to know what they are.

Mr. Lewin:—What difference does it make whether it is official or not?

THE COURT:—It goes to the question of credibility and the credence to be given to the testimony of the witness.

Mr. Lewin:—Is he planning to show that it is not confidential?

THE COURT:—I do not know what he is planning to show. I am only passing on each question as it arises.

Mr. Lewin:—What possible bearing can it have on the issues of the case?

THE COURT:—Objection overruled.

The Witness:—This was not sent to the Medical Society. I don't believe. I think if you will look at the address on there you will find it is 1824 Massachusetts Avenue. I think that is Dr. Neill's office.

By Mr. Leahy:

Q.—It is sent to him as president of the Medical Society of the District of Columbia?

A.—Yes. We went to see him in his capacity as president of the Medical Society.

Q.—You did?

A.—Yes. We told him that in the beginning, in the very first opening statement, that "We are coming to you because you, as president of the District Medical Society, should know about a situation of this kind."

Q.—I want to ask you this, and I am going to try to put it as clearly as I can so that I will not be misunderstood. When you called Dr. Neill and asked to see him, did he not say to you that Saturday that he would not see you in his official capacity, but that he would be glad to see you and would take away his Saturday afternoon and remain at his office to chat with you off the record in a confidential way?

A.—No.

Q.—That you say he did not say?

A.—I don't recall that he said that at all.

Q.—Did Dr. Neill appear to have any knowledge at all about the incident concerning which you said you went to see him?

Mr. Lewin:—He has already testified to that.

THE COURT:—That has been covered.

By Mr. Leahy:

Q.—He said he would look into it?

A.—That is my recollection.

Mr. Lewin:—He has testified to that, too. I think there ought to be some limit to this.

THE COURT:—Yes; I think there is quite a little repetition here.

Mr. Leahy:—I did not know that he had said that. It is just one question, if it is repetitious.

By Mr. Leahy:

Q.—From what source had you received your information about what you told Dr. Neill?

A.—I got it from Dr. Brown and it was confirmed by Dr. Lee.

Q.—What is Dr. Lee's full name?

A.—Allan E. Lee. I think his initial is "E."

Q.—Did Dr. Allan E. Lee talk with you personally about it?

A.—He did, personally.

Q.—Dr. Lee, I think you stated, at that time was on the staff of G. H. A.?

A.—Yes, sir.

Q.—And he had hospital privileges, did he not?

A.—That is right.

Q.—At Garfield Hospital?

A.—That is correct.

Q.—Courtesy privileges?

A.—Right.

Q.—The same as any one of these 400 doctors whom you mentioned in your letter?

A.—That is right.

Q.—And you told Dr. Neill that Dr. Lee had brought this lady to the hospital?

A.—Yes.

Q.—And then there was some discussion about—what? What was it you told him?

A.—There was some discussion that if she were in any way connected with Group Health Association, this Dr. Schoenfeld said, "I can't have anything to do with her." And she was upstairs then in a critical condition.

Q.—Was that statement made to Dr. Neill, that Dr. Lee was in the hospital at that time when the discussion took place?

A.—Oh, yes.

Q.—He was right there?

A.—Dr. Neill was not. You mean, Dr. Lee was?

Q.—Yes.

A.—Dr. Lee was present and heard it.

Q.—And Dr. Lee had the courtesy privilege to treat patients in that hospital?

A.—Yes; not surgical, however. He was not a surgeon.

Q.—But Dr. Lee had engaged Dr. Schoenfeld to perform the operation?

A.—I would not know that. Arrangements had been made for Dr. Schoenfeld to perform the operation. She was carried there in an ambulance and Dr. Schoenfeld was to be there and do the operating.

Q.—Did you tell Dr. Neill what time she got to the hospital?

A.—Yes.

Q.—What time was it?

A.—I described that she was found unconscious on the floor of her bathroom while she was dressing, and they rushed her right to Garfield Hospital.

Q.—What time of the day?

A.—Early in the morning, about seven-thirty.

Q.—Did you have information as to when she was operated on?

A.—No.

Q.—You did not find that out?

A.—It was during the day, because—

Q.—All right.

Mr. Levin:—Let him finish.

A.—I think Dr. Lee made a statement to these doctors and they said, "We can't touch her if she is connected with Group Health." He said, "I am on the courtesy staff and I am bringing this patient in as my patient."

By Mr. Leahy:

Q.—Then what happened?

A.—They said, "If that is the case, it is all right." And then the young lady was operated on that morning.

Q.—As soon as the hospital found out that Dr. Lee was bringing the lady to the hospital as his patient, Dr. Schoenfeld operated on her; is that right?

A.—I think that is correct; yes.

Q.—I don't quite get you then, what would cause you to go up to Dr. Neill to report.

A.—Because she was in a critical condition and the doctors were arguing that they could not go up if she was a member of the Group Health Association.

Q.—As soon as the hospital found out that Dr. Lee's patient was upstairs, Dr. Schoenfeld went up?

A.—Yes; but Dr. Lee was late getting there.

Q.—I thought you said he was there?

A.—She was taken in an ambulance, right from the house. Dr. Lee was called to the house and found her, and she was taken in the ambulance, and then arrangements had been made and Dr. Lee came in 30 or 40 minutes later and found that nothing had been done, and that is when he heard the conversation in the corridor of Garfield Hospital, and then Dr. Schoenfeld said in a loud voice, for the benefit of several of the doctors around there, "If she is a member of Group Health I'm sorry, but I can't do anything about it."

Q.—But he did operate on her?

A.—Then it was Dr. Lee said, "I am registering her here as my patient. I am on the courtesy staff."

Q.—I do not quite follow what you told Dr. Neill you went up to see him about. She was still a patient of Group Health when—

THE COURT:—I think you have gone over that. I think it is quite argumentative. I think this is a good point at which to stop. We will take our adjournment now until ten o'clock tomorrow morning. *(To be continued)*

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Change in Status.—H. R. 3204 has been reported to the House, making additional appropriations for the fiscal year 1941 urgently required for the Work Projects Administration and certain other federal agencies. This bill, among other things, proposes an appropriation of $525,000 to enable the Surgeon General of the Public Health Service to assist state and local health authorities in health and sanitation activities (1) in areas adjoining military and naval reservations, (2) in areas where there are concentrations of military and naval forces, (3) in areas adjoining government and private industrial plants engaged in defense work and (4) in private industrial plants engaged in defense work. This appropriation, too, will be used to provide emergency health and sanitation services in government industrial plants engaged in defense work and in areas adjoining United States military and naval reservations outside the United States.

Bills Introduced.—S. 783, introduced by Senator Murray, Montana, proposes to amend the Selective Training and Service Act of 1940. This bill is apparently a substitute for another bill introduced by Senator Murray dealing with the deferment under the Selective Training and Service Act of medical students, interns and residents. In addition, the bill provides that any individual selected for training and service who is a graduate of a medical school and is eligible as such a graduate for the examinations given by the National Board of Medical Examiners or who was so eligible at the time of his graduation, or who is a graduate of a school of dentistry or holds a degree of doctor of dental surgery or doctor of dental medicine and who holds a license to practice medicine, surgery or dentistry in any state, territory or possession and is engaged in such practice at the time of his selection and whose physical and mental fitness for such training and service has been satisfactorily determined, shall, in lieu of induction into the land or naval forces of the United States, be commissioned an officer in the Medical Department Reserve, Officers' Reserve Corps and ordered into active military service as provided by law. S. 797, introduced by Senator Walsh, Massachusetts, provides for the establishment of a National Physical Fitness Institute in the Federal Security Agency. This institute would be authorized (1) to select, prepare and conduct research with respect to tests and testing instruments for the purpose of testing physical fitness; (2) to select, prepare and conduct research with respect to follow-up procedures, forms of reports and methods of cooperating with agencies engaged in medical and health work, for the purpose of conserving and increasing the physical fitness of the American people; (3) conduct research for the purpose of determining the most efficient and practical methods of conserving and increasing physical fitness; (4) train specialists in the work of conserving and increasing physical fitness; (5) prepare reports and bulletins with respect to the conservation and increase of physical fitness for use by organizations and the general public; (6) on request, investigate the needs of organizations and industries for, and, to the extent possible with its personnel, cooperate with such organizations and industries in providing physical fitness services for their members and employees, and (7) cooperate with departments and other agencies of the government in programs designed to conserve and increase the physical fitness of their officers and employees. S. 839, introduced by Senator Sheppard, Texas, proposes to authorize the appointment of female dietitians and female physical therapy aides in the Medical Department of the Army. This bill provides that the Secretary of War is authorized and directed to provide for the appointment in the Medical Department of the Army of such number of female dietitians and female physical therapy aides as he may determine to be needed in the administration of laws providing for the hospitalization in army hospitals of officers, warrant officers and enlisted men of the regular army.

STATE MEDICAL LEGISLATION

California

Bills Introduced.—S. 1125 proposes to authorize the governing body of a city or county to employ one or more licensed optometrists to attend to such optometric conditions as the governing board of the city or county may designate. S. 1032 proposes to create a medical research board to engage in research particularly in those fields having to do with cancer, diseases of the heart and kidney ailments. The board is to consist of the respective heads of the schools of medicine of the University of California, Stanford University and the University of Southern California and two physicians appointed by the governor. A. 671 proposes that on the trial of any person charged with driving while intoxicated evidence shall be admissible as to the amount of alcohol in the defendant's blood at the time of the commission of the alleged offense as shown by a clinical analysis of the defend-

ant's breath, urine or other bodily substance. S. 1129 proposes to make it a misdemeanor to employ on full time a physician and surgeon or an osteopath for a salary, wage or stipend of less than $100 a month. S. 977 and A. 1301 propose to enact a separate naturopathic practice act and to create an independent board of naturopathic examiners to examine and license applicants for licenses to practice naturopathy. The bills propose to define naturopathy as "the treatment of the sick and afflicted by the use of such substances as light, air, water, clay, heat, rest, diet, herbs, electricity, massage, Swedish movements, suggestive therapeutics, magnetism, physical and mental culture." A. 1349, to amend the medical practice act, proposes to authorize the issuance of a "herb practitioner's certificate." A. 1507 proposes to create a State Board of Medical Laboratory Personnel Examiners to examine and license applicants for licenses to practice as clinical laboratory technicians or clinical laboratory technologists. A. 1570 proposes to require cooks, bus boys, waiters, waitresses, dish washers, dish dryers, and domestic servants to obtain certificates from the State Board of Health that they are not infected with any communicable disease. A. 1760 proposes that no employer or insurance company shall contract with any physician, hospital or other person for the medical or surgical care or hospitalization of any injured person on the basis of such physician, hospital or other person receiving a percentage of the gross premiums collected by such insurance company, on the basis of any percentage of such employer's pay roll, or on the basis of any fixed charges which are less than the reasonable value of such services as fixed by rates adopted by the Industrial Accident Commission. A. 1853, to amend the workmen's compensation act, proposes in effect to permit drugless practitioners to render at the expense of the employer such medical aid as an injured worker may require. A. 1988, to amend the workmen's compensation act, proposes in effect to permit osteopaths or chiropractors to render at the expense of the employer such medical aid to injured workmen as their industrial injuries may require. A. 2089, to amend the medical practice act, proposes to eliminate the right of the examining board to issue a drugless practitioner's certificate.

Connecticut

Bill Introduced.—H. 773 proposes to appropriate $100,000 to the state department of health for the biennium ending June 30, 1943 for research and study of the cause and control of cancer.

Georgia

Bill Introduced.—H. 273 proposes to provide for a board of trustees to control, operate and manage any county hospital owned or controlled by any county having a population of from fifty to sixty thousand inhabitants. The bill specifically vests in the board the right to determine and specify what physicians and surgeons shall be admitted to practice in the hospital, and only such physicians and surgeons shall be admitted to practice in such a hospital as have first obtained a permit from the board so to do.

Idaho

Bills Introduced.—S. 22 proposes to enact a separate naturopathic practice act and to create a board of naturopathic examiners to examine and license applicants for licenses to practice naturopathy as defined in the bill. This bill was reported unfavorably to the senate, February 5. S. 41 proposes to repeal the present osteopathic practice act and to enact a new one in its stead, which would if enacted, permit licensed osteopaths to practice "surgery and obstetrics and the use of antiseptics, anesthetics, narcotics and biologics." H. 117 proposes to grant to hospitals treating a person injured through the fault of another liens on any cause of action, suit, claim, counterclaim, demand, compromise or settlement accruing to the injured person because of his injuries. H. 124, to amend the chiropody practice acts, proposes, among other things, to define chiropody to mean "the diagnosis, mechanical, electrical, medical or surgical treatment of the human foot and leg, provided that chiropodists be limited in their practice to the human foot and leg." The bill further provides that "surgical treatment, as herein used, shall be held to mean the surgical treatment of abnormal nails, corns, callosities, bunions and other minor foot ailments and shall not include the amputation of the foot or leg, surgery of the leg, or the use of any anesthetic other than local anesthetics."

Iowa

Bill Introduced.—H. 168 proposes to condition the issue of a license to marry of the presentation by each party to the proposed marriage of a physician's certificate that the party is free from syphilis or is not in a state of that disease whereby it may become communicable as nearly as can be determined by a thorough physical examination and such standard microscopic and serologic tests as are necessary for the discovery of syphilis.

Maine

Bill Introduced.—S. 295 proposes to create a state board of eugenics which is to be authorized to order the sexual sterilization of any person living in the state who is feebleminded, insane, syphilitic, a habitual criminal, a moral degenerate or a sexual pervert and is thereby a menace to society in that he or she may produce offspring having an inherited tendency to the social inadequacies noted.

Maryland

Bill Introduced.—H. 247 proposes to prohibit the employment of any food handler unless he presents a certificate from the county health officer that he is free from trachoma, active tuberculosis of the lungs, open skin tuberculosis, syphilis, gonorrhea, open external cancer or barber's itch.

Michigan

Bills Introduced.—H. 110 proposes to authorize the organization and operation of nonprofit osteopathic service corporations whereby osteopathic service may be provided at the expense of such corporations to such persons or groups as become subscribers to such plans under contracts which will entitle each subscriber to definite osteopathic service, by licensed osteopaths in their office, in osteopathic hospitals and in the home. H. 117, to amend the workmen's compensation act, proposes to make compensable "any disease contracted by any employee or person engaged in public health work." H. 131 proposes to prohibit the retail sale or distribution of barbituric acid, chloral hydrate or paraldehyde except on the prescription of a licensed physician, surgeon, osteopathic physician, dentists or veterinarians. The bill proposes to require the practitioners mentioned to keep a record of all "such dispensions or prescriptions." The bill also proposes to make it the duty of every physician, surgeon, osteopathic physician, dentist, veterinarians, druggists, pharmacists or hospitals, when dispensing any barbituric acid, chloral hydrate or paraldehyde to mark on the dispensing container the name, address of the patient, the date, the quantity of drugs and the name of the person dispensing the same.

Montana

Bill Introduced.—S. 70 proposes to prohibit the operation of a maternity hospital without first obtaining a license from the state board of health. The bill proposes to define a maternity hospital as any place receiving within a period of six months for care or treatment during pregnancy or during delivery or within ten days after delivery more than one woman.

New Jersey

Bill Introduced.—S. 29 proposes a procedure whereby hospitals may be reimbursed for care rendered to indigent persons injured in automobile accidents.

New Mexico

Bills Introduced.—S. 34 proposes to make it the duty of all surgeons, physicians and other persons licensed by the state to treat the sick or injured, who may treat or operate on any person for or on account of any gunshot wound, to report the fact of such treatment within twenty-four hours thereafter to the nearest or most available peace officer in the state. S. 38 proposes to make it the duty of "every physician, surgeon or other person licensed by the state of New Mexico to treat sick or injured persons to forthwith and

without delay visit and treat any person who may call on them for treatment where such afflicted person resides, within 2 miles of the office of such physician, whenever, in the judgment of such physician, surgeon or other person licensed by the state of New Mexico to treat the sick or injured, such visit can be made without probable injury to other patients of such physician, surgeon or other person licensed by the state of New Mexico to treat the sick or injured."

New York

Bills Introduced.—A. 574 proposes to require every physician immediately to give notice to the appropriate health officer of every case of infantile paralysis under his care. The bill also proposes to create in the state department of health a division of infantile paralysis, which is to be charged with the duty of conducting investigations of the cause, mortality rate, methods of treatment, prevention and cure of infantile paralysis and allied diseases, including the nature and extent of available facilities for the diagnosis and treatment of these diseases. The division is to cooperate with local health authorities, physicians, hospitals, clinics and voluntary associations in the development of suitable facilities for the diagnosis, treatment and control of infantile paralysis. S. 521 and A. 620 proposes that in New York City a domestic servant to continue his or her employment must possess the certificate of a licensed physician certifying that in his opinion he or she is not infected with syphilis or is not in a state of that disease whereby it may become communicable.

Oklahoma

Bill Introduced.—H. 180 proposes to condition the issuance of a license to marry on the presentation by each party to the proposed marriage of a physician's certificate that the party has been given a standard serologic examination not more than fifteen days prior to the date of application and that in the physician's opinion the person is either not infected with syphilis or, if infected, is not in a state of that disease which may become communicable to the marital partner.

Oregon

Bills Introduced.—H. 150, to amend those provisions of the medical practice act relating to the practice of osteopathy, proposes (1) to create a separate examining board for osteopaths and (2) to authorize a separate osteopathic examining board to examine and license applicants for licenses to practice osteopathy. H. 203 proposes a system of compulsory health insurance.

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Bills Introduced.—H. 121 proposes to prohibit the operation of a hospital, sanatorium or infirmary without a license from the state department of health. H. 122 proposes to authorize the organization and operation of nonprofit corporations to establish, maintain and operate nonprofit hospital service plans whereby hospital care may be provided by such corporations through hospitals with which the corporations have contracted to subscribers to such hospital service plans.

Washington

Bills Introduced.—S. 12 proposes to condition the issuance of a license to marry on the presentation by each party to the proposed marriage of the certificate of a licensed physician stating that the party has been given such examination, including a standard serologic test, as may be necessary for the discovery of syphilis and that in the opinion of the physician the party is either not infected with syphilis or, if so infected, is not in a stage of that disease which is or may become communicable to the marital partner. S. 95 proposes to enact a separate naturopathic practice act and to provide for the examining of applicants for licenses to practice naturopathy by a naturopathic examining committee. The bill proposes to authorize the licensing without examination of persons who have been licensed to practice naturopathy, or any other system equal thereto, for at least two years by a state board or committee of examiners of another state. It is not clear whether individuals receiving a license in this manner are to be subject to the basic science act. A literal interpretation of the bill would require their licensing without passing the examinations given by the examining committee in the basic sciences. H. 226, to amend the chiropody practice act, proposes to define the practice of chiropody as "the diagnosis and the medical, surgical, mechanical . . . manipulative and electrical treatment of . . . ailments of the human foot, excepting amputation of the foot or toes or the administration of an anesthetic other than local and excepting treatment of systemic conditions or the results and complications thereof."

Wisconsin

Bill Introduced.—A. 149 proposes to require the state department of public welfare to provide in either a state or a county hospital of its selection chiropractic service for the insane for those who request it by their guardian or next of kin. The chiropractice services in such hospital are to be rendered by chiropractors selected by the department from a list furnished by the board of directors of the Wisconsin Chiropractic Association.

Wyoming

Bills Introduced.—S. 33 proposes to provide for the administration on public health in the state by creating county and district departments of health. H. 128, to amend the medical practice act, proposes that the board of medical examiners shall act on an application for a license by reciprocity within six months from the time of its presentation, "but nothing herein shall prevent the applicant from practicing within the state at any time after the application has been made and the certificate presented to the board."

Bill Passed.—H. 120 passed the house, February 10, proposing to require a physician licensed to practice medicine attending a pregnant woman for conditions relating to her pregnancy during gestation or at delivery to take or cause to be taken a sample of her blood at the time of first professional visit or within ten days thereafter, and to submit the sample to an approved laboratory for a standard serologic test for syphilis.

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Oklahoma

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MICHIGAN

New School of Public Health—Dr. Vaughan Named Professor.—Henry F. Vaughan, D.P.H., health commissioner of Detroit, has been appointed professor of public health at the University of Michigan, where since 1922 he has been special lecturer in public health administration. Dr. Vaughan will also cooperate in planning for a new building and organization of a school of public health which, it is hoped, will be placed in operation this fall. Cooperating in the project will be the W. K. Kellogg Foundation, Battle Creek, and the Rockefeller Foundation, New York, each agreeing to provide $500,000 for the establishment of the school. Not more than one half of the total sum of $1,000,000 will be available for site, building and equipment, the remainder to be used over a ten year period for its initial expenses of operation. Dr. Vaughan received his degree in public health at the University of Michigan in 1916. He served as associate professor of public health at Wayne University from 1915 to 1937 and has been professor of preventive medicine and public health at Wayne since 1937 and commissioner of health of Detroit since 1918. During the World War Dr. Vaughan was in charge of the sanitary department at Camp Upton, Long Island, N. Y., and Camp Wheeler, Georgia, and was a member of a pneumonia commission appointed by the surgeon general. He was chairman of the Committee on Municipal Health Organization of President Hoover's Conference on Child Health and

without delay visit and treat any person who may call on them for treatment where such afflicted person resides, within 2 miles of the office of such physician, whenever, in the judgment of such physician, surgeon or other person licensed by the state of New Mexico to treat the sick or injured, such visit can be made without probable injury to other patients of such physician, surgeon or other person licensed by the state of New Mexico to treat the sick or injured."

New York

Bills Introduced.—A. 574 proposes to require every physician immediately to give notice to the appropriate health officer of every case of infantile paralysis under his care. The bill also proposes to create in the state department of health a division of infantile paralysis, which is to be charged with the duty of conducting investigations of the cause, mortality rate, methods of treatment, prevention and cure of infantile paralysis and allied diseases, including the nature and extent of available facilities for the diagnosis and treatment of these diseases. The division is to cooperate with local health authorities, physicians, hospitals, clinics and voluntary associations in the development of suitable facilities for the diagnosis, treatment and control of infantile paralysis. S. 521 and A. 620 proposes that in New York City a domestic servant to continue his or her employment must possess the certificate of a licensed physician certifying that in his opinion he or she is not infected with syphilis or is not in a state of that disease whereby it may become communicable.

Oklahoma

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Protection and in 1925 was president of the American Public Health Association. Dr. Vaughan started his new work at the university February 17.

MISSOURI

St. Louis Clinics.—The annual clinical conference of the St. Louis Clinics will be held at the Coronado Hotel, March 10-13. For the most part clinics will be conducted by St. Louis physicians. Out of state speakers will include:

Dr. Fred L. Adair, Mary Campau Ryerson professor of obstetrics and gynecology, University of Chicago, the School of Medicine, Chicago.
Dr. William Leslie Bradford, associate professor of pediatrics, University of Rochester School of Medicine, Rochester, N. Y.
Dr. Charles A. Doan, professor of medicine, Ohio State University College of Medicine, Columbus.
Dr. Willis D. Gatch, dean and professor of surgery, Indiana University School of Medicine, Indianapolis.
Dr. John J. Shea, Memphis, Tenn.
Dr. Arthur Steindler, professor of orthopedic surgery, State University of Iowa College of Medicine, Iowa City.
Dr. Fred D. Weidman, professor of dermatologic research, University of Pennsylvania School of Medicine, Philadelphia.

The program will also include a special subject discussed by reserve officers of the army and navy.

NEW JERSEY

Course on Peripheral Vascular Disease.—A postgraduate course on peripheral vascular disease is in progress at the Englewood Hospital, Englewood, under the auspices of the Bergen County Medical Society. The series is as follows:

Dr. A. Wilbur Duryee, New York, Differential Diagnosis of Peripheral Vascular Diseases, Including the Evaluation of Tests, February 6.
Dr. Gerald H. Pratt, New York, Surgery of Peripheral Vascular Diseases: I. Arterial and Nerve Surgery, February 13.
Dr. Duryee, Raynaud's Syndrome and Other Conditions of Unusual Interest, February 20.
Dr. Irving S. Wright, New York, Arteriosclerosis and Thromboangiitis Obliterans, February 27.
Dr. Pratt, Surgery of Peripheral Vascular Diseases: II. Venous and Lymphatic Surgery, March 6.
Dr. Wright, Thrombophlebitis, March 13.

NEW YORK

Society News.—Dr. Leighton F. Johnson, Boston, addressed the Medical Society of the County of Albany in Albany, January 22, on "Surgical Treatment of Deafness."——Lieut. Col. Raeburn J. Wharton, Johnson City, and Major Fred L. Ritter, Syracuse, addressed the Broome County Medical Society, Binghamton, January 14, on "The Medical Regiment" and "The Army Medical Service and the Civilian Physician."——Drs. Raymond J. Pieri and Francis R. Irving, Syracuse, addressed the Onondaga County Medical Society, Syracuse, February 4, on "Direct Supravesical Extraperitoneal Cesarean Section."

Institute on Pneumonia.—The Medical Society of the County of Monroe, the Medical Society of the State of New York and the bureau of pneumonia control of the state department of health presented an institute on pneumonia in Rochester, January 21. Dr. George V. Taplin, Rochester, as secretary of the committee on pneumonia control of the county society, presented a report of a study of 785 cases of pneumonia observed in Rochester hospitals in the preceding year. Drs. Maxwell Finland, Boston, and Edward S. Rogers of the state health department, Albany, discussed the report, and Dr. Oliver W. H. Mitchell, Syracuse, led general discussion.

New York City

Symposium for Physicians and Lawyers.—The Association of the Bar of the City of New York, the New York Academy of Medicine and the Medical Society of the County of New York are cooperating in a symposium of four meetings to discuss "Some Medicolegal Aspects of Personal Injury Actions and Actions for Total and Permanent Disability Insurance." The first meeting was held January 21 with Drs. William Darrach and Lewis D. Stevenson as the speakers on "Fractures of the Long Bones" and "Head Injuries and Injuries to the Central Nervous System and Their After-Effects" respectively.

Dr. Mary Swartz Rose Dies.—Mary Swartz Rose, Ph.D., professor of nutrition, Teachers College, Columbia University, and a member of the Council on Foods and Nutrition of the American Medical Association, died February 1, aged 66. Dr. Rose, a native of Ohio, took her Ph.D. degree at Yale University, New Haven, Conn., in 1909. She joined the staff of the department of nutrition at Teachers College in 1906 and became professor in 1921. In 1933 she was appointed to the Council on Foods (now the Council on Foods and Nutrition) and in 1935 she was a member of the Nutrition Commission of the Health Organization of the League of Nations. Dr. Rose was a member of many scientific organizations, including the American Institute of Nutrition, of which she was president in 1937-1938; the American Society of Biological Chemists, American Physiological Society, Society of Experimental Biology and Medicine, the Harvey Society of New York and Sigma Xi; also a fellow of the American Association for the Advancement of Science and the American Public Health Association. Dr. Rose was in great measure responsible for many advances in the teaching of nutrition, especially through her books, including "Laboratory Handbook for Dietetics," "Feeding the Family," "Everyday Foods in Wartime," "Foundation of Nutrition" and "Teaching Nutrition to Boys and Girls."

OREGON

Changes in State Board.—Governor Sprague has appointed Drs. Thompson Coberth, The Dalles, and Charles E. Hunt, Eugene, to the state board of health to succeed Drs. Frank R. Mount and Robert L. Benson, Portland. Dr. Roy A. Payne, Portland, was reappointed.

Society News.—Dr. Alfred J. French, Marshfield, addressed the Coos-Curry Counties Medical Society, Marshfield, in December on "Coronary Occlusion."——Dr. Oscar J. Halboth presented a paper on "Cranial Cerebral Trauma" before the Jackson County Medical Society, Medford, recently.——Dr. Albert W. Holman, Portland, addressed the Polk-Yamhill-Marion County Medical Society in Salem in December on "Toxemia of Pregnancy and Nephritis in Pregnancy."——Dr. Goodrich C. Schauffler, Portland, addressed the Yamhill County Medical Society, McMinnville, in December on "Difficulties Encountered Late in Labor Contributing to Maternal Morbidity."——A medical defense program was presented before the Multnomah County Medical Society, Portland, January 15, with the following speakers: Drs. Frank R. Mount, on "Selective Service Examinations"; Laurie P. Lind, "The Reserve Officer and the Army Medical Corps"; Russell L. Johnsrud, "The Naval Medical Corps Reserve," and Cecil J. Ross, "Reserve Officers and the Air Corps." All are of Portland.

PENNSYLVANIA

Personal.—Dr. George B. McClellan Wilson Jr., acting medical superintendent of the Pennhurst State School, has been appointed medical director of a new industrial school at White Hill, it is reported.——Dr. William C. Troxell, Allentown, has been elected a district governor of Rotary International for 1940-1941.

Philadelphia

University Course in Industrial Hygiene.—The University of Pennsylvania announced recently that a course in industrial hygiene for physicians, chemists and engineers who wish to specialize in that field was to be offered during the second semester of the year, beginning this month. The course will be given in the department of public health and preventive medicine, of which Col. Arthur Parker Hitchens is director. Mr. Theodore Hatch, formerly associate dust control engineer, division of industrial hygiene, New York State Department of Labor, New York, will be in direct charge of the course as associate professor of hygiene. The resources of several departments of the university will be used in the instruction.

WEST VIRGINIA

Personal.—A recent meeting of the Potomac Valley Medical Society in Romney was held in honor of Dr. Martin Frank Wright, Burlington, then president of the society, celebrating his fiftieth anniversary of medical practice. Dr. Wright graduated from the University of Maryland School of Medicine, Baltimore, in 1890.

Society News.—Dr. George Crile Jr., Cleveland, addressed the Cabell County Medical Society, Huntington, January 9, on "Diagnosis of Treatment of Diseases of the Thyroid."——Dr. John F. McCuskey, Clarksburg, was the speaker at a meeting of the Central West Virginia Medical Society in Gassaway, January 15, on "Differential Diagnosis Between Gastrointestinal and Genitourinary Lesions."——Dr. Henry E. Baum, Charleston, discussed "Menstrual Disorders" before the Logan County Medical Society, Logan, January 8.——Dr. Frederick P. Coller, Ann Arbor, Mich., spoke on "Postoperative Complications" at a meeting of the Ohio County Medical Society, Wheeling, January 7.——Dr. John C. Dumler, Baltimore, discussed "Dysmenorrhea" at a meeting of the Raleigh County Medical Society, Beckley, January 16.

GENERAL

Dr. Mustard Becomes Editor of Public Health Journal.—Dr. Mazyck P. Ravenel, Columbia, Mo., editor and editor-in-chief of the *American Journal of Public Health* for the past sixteen years, has been made editor emeritus and Dr. Harry Stoll Mustard, director of the De Lamar Institute of Public Health of Columbia University, New York, has been appointed editor. Dr. Ravenel, a native of South Carolina, graduated from the Medical College of the State of South Carolina in 1884. He is now professor emeritus of medical bacteriology and preventive medicine at the University of Missouri School of Medicine, Columbia. His special fields of research are tuberculosis and rabies.

Surgical Association to Meet.—The first annual meeting of the Central Surgical Association will be held at the University of Michigan Medical School, Ann Arbor, February 28 and March 1. More than fifty papers are scheduled, two groups of them to be included in symposiums on diseases of the extremities and on gastrointestinal surgery. Among other papers will be:

Dr. Cameron Haight, Ann Arbor, Management of Lobectomy Patients.
Dr. Hiram T. Langston, Ann Arbor, Cutaneous Sensitivity to Catgut Following Multiple Operations.
Dr. William G. Gordon, Ann Arbor, The Use of Hormone Therapy in Cryptorchism.
Dr. Howard C. Jackson, Ann Arbor, Intraperitoneal Sulfanilamide.
Dr. Frank V. Theis, Chicago, Correlation of Biochemical and Clinical Results in the Treatment of Thromboangiitis Obliterans.
Dr. J. Grafton Love, Rochester, Minn., Glossopharyngeal Neuralgia: Diagnosis and Surgical Treatment.
Dr. James Dewey Bisgard, Omaha, The Relation of Hyperthyroidism to Hypertension.
Dr. Harold M. Trusler, Indianapolis, Deformities Due to Burns.

Society of University Surgeons.—The third annual meeting of the Society of University Surgeons was held February 14-15 at the Barnes Hospital, St. Louis. The speakers included:

Drs. Max Taffel, Samuel C. Harvey and William J. German, New Haven, Conn., Effect of Sulfanilamide on Wound Healing; An Experimental Study. The Effect of the Sulfonamides on Cerebral Tissue.
Dr. Warfield M. Firor, Baltimore, Use of Bactericidal Agents in the Colon.
Dr. William E. Adams, Dr. Richard A. Rasmussen and Leo S. Hrdina, Chicago, Should the Pleural Space Be Reduced in Size in the Resection of Lung Tissue?
Drs. Richmond L. Moore, George H. Humphreys, New York, and Howard T. Barkley, Ann Arbor, Mich., Studies of the Jugular Pressure of Anesthetized Dogs During Positive Inflation of the Lungs Before and After Pneumonectomy.
Dr. John Englebert Dunphy, Boston, Effects of Replacement Therapy on the Pathologic Changes in Experimental Traumatic Shock.
Dr. Edward L. Howes, Washington, D. C., The Role of Muscle Contracture and Epithelialization in the Healing of Artificial Peptic Ulcer.
Dr. Forrest O. J. Young, Rochester, N. Y., Autogenous and Homogeneous Cartilage Grafts.

The annual dinner was held Friday evening at the Hotel Chase with Dr. Warren H. Cole, Chicago, delivering the presidential address on "Opportunities for the Society of University Surgeons in Surgical Progress."

The Commonwealth Fund.—The annual report of the Commonwealth Fund, covering the year ended Sept. 30, 1940, indicates expenditures of $2,009,685.16. For purposes of war relief $135,000 was expended, some going to the Finnish Relief Fund, some to the American Red Cross and the Allied Relief Fund; $25,000 for the maintenance of an epidemiologic unit and laboratory organized by the Harvard Medical School for service in England. Two-year postgraduate fellowships at American universities and technical institutions for seventeen graduates of British universities received $83,000. General hospitals of from forty to sixty beds with nurses' homes were provided in several states, costing altogether almost $500,000. Money was also provided for medical residents and outpatient departments in five hospitals, for the development of prepayment plans and for fellowships for postgraduate study by physicians. Public health activities received $340,053.01; health studies almost $35,000 and work in mental hygiene almost $150,000. Money was also expended for publications in the interest of the public health. There were many special grants for medical research, involving studies on every aspect of human disease but largely for air-borne infections, arthritis, rheumatic fever and fundamental studies of bacteria. Money was also expended in considerable amounts to aid postgraduate medical education in Oklahoma, Tennessee and Minnesota, and funds were provided to a number of medical schools to aid young men to complete their medical courses on consideration that they would establish their practices in rural areas.

Southeastern Surgical Congress.—The twelfth annual postgraduate assembly of the Southeastern Surgical Congress will be held at the Hotel John Marshall in Richmond, Va., March 10-12, under the presidency of Dr. Irvin Abell, Louisville. Included among the speakers will be:

Dr. Hu C. Myers, Philippi, W. Va., Duodenal Drainage in the Diagnosis of Gallbladder Disease.
Dr. Gershom J. Thompson, Rochester, Minn., Carcinoma of the Prostate: Its Conservative Surgical Treatment.
Dr. Alfred B. Longacre, New Orleans, Immunity in Staphylococcus Infections.
Dr. Brien T. King, Seattle, A New and Function Restoring Operation for Bilateral Abductor Cord Paralysis.
Dr. Parker C. Hardin, Monroe, N. C., Cod Liver Oil Therapy of Wounds and Burns.
Dr. Charles F. Geschickter, Baltimore, The Endocrine Aspect of Chronic Cystic Mastitis.
Dr. Virgil P. W. Sydenstricker, Augusta, Ga., Importance of Vitamin Treatment in Preparation and Postoperative Care of Patients.
Dr. Temple S. Fay, Philadelphia, Further Observations on Human Refrigeration.
Drs. William G. Hamm and Joseph Hiram Kite, Atlanta, Relief of Contractures of the Knee Following Extensive Burns.
Dr. Gabriel Tucker, Philadelphia, Cancer of the Larynx, Diagnosis, Treatment and Results, with Observations on the Relation of Benign Tumors to Cancer.
Dr. Murdock M. Snelling, Gulfport, Miss., The Treatment of Chronic Cervicitis and Allied Conditions with the Surgical Diathermy.

Dr. Frank H. Lahey, Boston, President-Elect, American Medical Association, will deliver the C. Jeff Miller lecture Monday evening on "The Surgical Treatment of Gastric, Duodenal and Jejunal Lesions."

CORRECTIONS

The Virus of Poliomyelitis in Stools and Sewage.—In the article by Paul and Trask in THE JOURNAL, February 8, the legend published under figure 4 on page 495 should have been placed under figure 3, and the new legend for figure 4 should read "Map of a small section of the city of Charleston, indicating where sewage tests were made."

Suppression of Lactation by Testosterone.—Duffy and Corsaro in their paper on this subject in THE JOURNAL, January 4, in the last paragraph in the first column on page 34, indicated that Siegler and Silverstein obtained uniformly good results with doses of 125 to 150 mg. Drs. Siegler and Silverstein write that they stated in their article in the *American Journal of Obstetrics and Gynecology*, January 1940, that they obtained good results with three small doses of 10 mg. each; these doses were lower than those used by Kurzrok and O'Connell and lower also than the doses used in the cases that were studied by Duffy and Corsaro.

Government Services

The Government Needs Pharmacologists

The U. S. Civil Service Commission has announced open competitive examinations for positions of senior pharmacologist at $4,600 a year, pharmacologist at $3,800, associate pharmacologist at $3,200 and assistant pharmacologist at $2,600. Vacancies as they occur in these positions in the War Department at Edgewood Arsenal, Maryland, and contemplated vacancies in these positions in Washington, D. C., and in the field and vacancies in positions requiring similar qualifications will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion. Positions of junior pharmacologist and junior toxicologist at $2,000 a year will be filled from the registers resulting from these examinations by certification of eligible persons who express willingness to accept this salary. Applicants should state the lowest salary they are willing to accept. Application forms may be obtained from the Secretary, Board of U. S. Civil Service Examiners at any first or second class post office, except in the following district headquarters cities: Atlanta, Boston, Chicago, Cincinnati, Denver, New Orleans, New York, Philadelphia, Seattle, St. Louis, St. Paul, San Francisco, Honolulu, Balboa Heights, C. Z., and San Juan, P. R. The forms may also be obtained from the office of the commission at Washington. Applications will be received until December 31, and certification made as the needs of the service require, except that if a sufficient number of eligible applicants are obtained, applications may be closed, in which case due notice will be given.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 31, 1940.

The Prevention of Infection in Air Raid Shelters

The evacuation of children from cities in which they are exposed to air raids has been described previously. But in spite of every inducement by the government a large number of children remain because their parents are unwilling to let them go or to go with them. Compulsory general evacuation has been suggested, but, as befits a democracy, the government has decided against it. There is now to be one exception to the policy of voluntary evacuation. Under the defense regulations the minister of health is taking power to require the medical examination in an area defined by an order, of any child who is thought to be suffering or to be in such a state of health as to be likely to suffer in body or mind as a result of war conditions. If the examination shows this, there will be power to send the child away under the government evacuation scheme. Such children will, if necessary, be cared for in hostels in the country. The chief danger to health for children who remain in London and other areas is infection arising from living in air raid shelters. To minimize this danger the minister of health is taking power for the medical examination of children in shelters with the object of watching their health and enabling direct medical advice to be given to parents. He is also taking power to examine any person in a shelter who is thought to be suffering from an infectious disease or to be verminous and to require isolation, removal to a hospital or cleansing.

Scheme of Compensation for War Injuries to Civilians

A scheme has been in existence for compensating civil defense volunteers and civilian workers for injuries due to enemy action. It has now been improved and extended so as to include all adults whether "gainfully occupied or not." The scheme rounds off the government plan for compensating all civilians who suffer loss of property or personal injury through air raids or other hostile acts. No such measure of protection for civilians against war risks has been devised in any other country. The compensation is comparable to the maximum amount payable under the workmen's compensation act. The injury allowances at present payable to civil defense volunteers and gainfully occupied persons will be increased to the following weekly rates: married men, $7; single men not in a hospital, $7; in a hospital, $5; women not in a hospital, $5.50; in a hospital, $3.50. To persons not gainfully occupied the following will be paid weekly: married men not in a hospital, $4; in a hospital, $2; single men not in a hospital, $4; in a hospital, $2; women not in a hospital, $3; in a hospital, $1.50.

The government felt that special consideration should be given to a widow in view of the immediate cessation of her husband's earnings and that provision should be made for the widow of a civil defense volunteer or of a civilian worker comparable to that for the widow of a serving soldier. They therefore decided that such a widow should be paid an inclusive allowance of $10 weekly for the first ten weeks after her husband's death by a war injury. The government considers that the scheme is preferable to a supplementary state insurance measure, which would have many difficulties. The experience so far of air raid casualties is that most of the injured were not occupied in earning a living.

Though a great advance, the scheme has aroused protest from women leaders, mostly members of Parliament, against the differentiation in the rates to be paid to nonearning men and women, whatever case there may be for differentiation in payments for lack of earnings. But such differentiation as they object to is common to all our schemes of social service.

Immunization Against Diphtheria: American Help

Crowded air raid shelters and the redistribution of the population caused by the evacuation of children have increased the danger of the spread of diphtheria. The Ministry of Health aims at immunizing at least five million children before the diphtheria season, which is usually early in the year. At the request of the British Red Cross, the American Red Cross is sending to England by air sufficient material for the preventive inoculation of two hundred thousand children, and sufficient to immunize a further eight hundred thousand is following by sea. The ministry has had such an enthusiastic response to its offer of free immunization that supplies of material are running short. We have eleven and a half million children under the age of 15 years.

Rockefeller Grant to the Royal College of Surgeons

The Royal College of Surgeons has been damaged by the explosion of a bomb outside. Because it did not receive a direct hit, the damage is slight, mainly to ceilings. As a precaution the more valuable books and specimens had previously been removed to a place of greater safety. The Rockefeller Foundation has made a gift of $7,500 for the expenses of evacuating the library and research laboratories.

The Treatment of British Prisoners of War

A satisfactory report on British prisoners of war has been received through the International Red Cross in Geneva. It has been made by two Swiss physicians, Drs. Marcel Jounod and Martel. They have been allowed to visit hospitals in German occupied France and Belgium. It is particularly satisfactory that British army surgeons who are prisoners take part in the care of their wounded countrymen.

Marriages

HUBERT DINWIDDIE CROW, Buckingham, Va., to Miss Pattie Gregg Featherstun of Richmond, Nov. 18, 1940.

EARLE SINCLAIR MCKEY JR., Valdosta, Ga., to Miss Alys Katherine Keiley of Atlanta, Nov. 6, 1940.

BURTON EUGENE FIELD, Fayetteville, Ark., to Miss Georgina Corson in Curdsville, Va., Nov. 30, 1940.

FRANK D. ROYCE, Danville, Ky., to Mrs. Margaret Whitlock Lewis of Lebanon, Nov. 27, 1940.

WILLIAM P. HIGGINS Jr. to Miss Ruth Connor, both of Fort Worth, Texas, Nov. 21, 1940.

EGBERT VERNON ANDERSON to Miss Rela Brown Randall, both of Atlanta, Ga., Nov. 21, 1940.

PAUL H. HARWOOD Jr., Southport, Conn., to Miss Sibyl Young Hine of New York, Nov. 16, 1940.

THEODORE LOUIS TAKACY, Slater, S. C., to Miss Grace Jameson in Greenville, Nov. 16, 1940.

JOHN HUBERT CLARK, Knoxville, Tenn., to Miss Lois Helene Nabrit of Nashville, Nov. 28, 1940.

WALTER JOHN BALZER to Miss Elizabeth Compton, both of Davenport, Iowa, Nov. 30, 1940.

ABNER BURESH to Miss Jane Elizabeth Cray, both of Lime Springs, Iowa, Nov. 28, 1940.

JOEL FLEET, Live Oak, Fla., to Miss Margaret Fishler of Fernandina, Nov. 10, 1940.

MORRIS M. GANDIN to Miss Lucille Slotnikow, both of Los Angeles, Nov. 3, 1940.

GERALD KENT RIDGE, Ventura, Calif., to Miss Priscilla Ferne Beverly, Nov. 8, 1940.

MARVIN CROW to Miss Kathryn Sue Martin, both of Warren, Ark., Nov. 27, 1940.

Deaths

William Clarence Braisted ● Surgeon General, Rear Admiral, United States Navy, retired, died, January 18, at his home in West Chester, Pa., aged 76. Admiral Braisted was born in Toledo, Ohio, Oct. 9, 1864. He was graduated from the University of Michigan, Ann Arbor, in 1883 and from the College of Physicians and Surgeons, medical department of Columbia College, New York, in 1886. He served his internship at Bellevue Hospital, New York, from 1886 to 1888, and from 1888 to 1890 he practiced medicine in Detroit. He entered the navy as an assistant surgeon in 1890 and served on many naval vessels. Admiral Braisted was an instructor of surgery at the Naval Medical School, Washington, D. C., on two different occasions. In 1904 he fitted out and equipped the hospital ship *Relief*. He represented the medical department in Japan during the Russo-Japanese war. From 1906 to 1912 he was assistant chief of the Bureau of Medicine and Surgery and assisted in its reorganization. In 1906-1907, during the administration of Theodore Roosevelt, Admiral Braisted was an attending physician at the White House. He was the fleet surgeon of the Atlantic Fleet from 1912 to 1914 and for nearly seven years was surgeon general and chief of the Bureau of Medicine and Surgery, with rank of rear admiral. He retired from the navy in 1920. Admiral Braisted was President of the American Medical Association, 1920-1921; in 1913 president of the Association of Military Surgeons of the United States; president of the National Board of Medical Examiners from 1915 to 1921; fellow of the American College of Surgeons. He served as president of the board of directors of the Columbia Hospital for Women and was on the board of visitors of St. Elizabeths Hospital in Washington. He was president of the Philadelphia College of Pharmacy and Science, 1920 to 1926. Until his retirement from the navy, Admiral Braisted held executive posts with the American Red Cross. He received the Distinguished Service Medal for service during the World War, the Order of Bolivar from Venezuela and a decoration from the Emperor of Japan. He was a fellow of the Royal College of Surgeons of Edinburgh and was awarded honorary degrees by Columbia University, New York; Jefferson Medical College of Philadelphia, and Northwestern University, Chicago.

WILLIAM CLARENCE BRAISTED
1864-1941

Francis Marion Shook ● Passed Assistant Surgeon Lieutenant, United States Navy, retired, Oakland, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1904; entered the navy in 1905; received his commission as passed assistant surgeon March 15, 1908; retired Nov. 8, 1912 for incapacity resulting from an incident of the service; served during the World War; received the Theodore Roosevelt Medal and letter of commendation from Secretary of the Navy for "Service in San Francisco Fire and Earthquake"; member of the Pacific Coast Oto-Ophthalmological Society; aged 60; died, Dec. 27, 1940, in Orinda of pulmonary embolus and cholecystitis with stone.

Fred Ellsworth Clow ● Wolfeboro, N. H.; Harvard Medical School, Boston, 1904; formerly secretary of the New Hampshire Board of Registration in Medicine; past president of the New England Association for the Study of Neoplastic Diseases; fellow of the American College of Physicians; past president of the Carroll County Medical Society; served during the World War; member of the executive committee and visiting physician on the staff of the Huggins Hospital; aged 59; died, January 4, of arteriosclerotic heart disease with coronary occlusion.

John Howard Crosby, Fultonville, N. Y.; Long Island College Hospital, Brooklyn, 1895; member of the Medical Society of the State of New York; county coroner; physician of the county jail in Fonda; served as school physician and at one time as member of the school board; health officer of the consolidated health district of Glen, Fultonville and the town of Rout since 1936; on the staffs of the Nathan Littauer Hospital, Gloversville, Amsterdam (N. Y.) City Hospital and St. Mary's Hospital, Amsterdam; aged 66; died, Dec. 9, 1940, of coronary occlusion.

N. Stone Scott, Cleveland; Western Reserve University Medical Department, Cleveland, 1889; fellow of the American College of Surgeons; formerly professor of surgery and at one time dean of the Cleveland College of Physicians and Surgeons, medical department of Ohio Wesleyan University, later amalgamated with Western Reserve; at various times on the staffs of the Cleveland General, Lutheran, St. Luke's and St. Vincent's Charity hospitals; aged 77; died, Dec. 24, 1940, in St. Petersburg, Fla., of heart disease.

Henry S. Creese, Littlestown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1905; member of the Medical Society of the State of Pennsylvania; past president of the Adams County Medical Society; for many years member of the school board; on the staff of the Annie M. Warner Hospital, Gettysburg; aged 62; died, Dec. 17, 1940, of coronary embolism.

Arthur Bowles Fleming ● Tamaqua, Pa.; Medico-Chirurgical College of Philadelphia, 1902; formerly vice president of the Medical Society of the State of Pennsylvania; past president and secretary of the Schuylkill County Medical Society; served during the World War; aged 65; died, Dec. 21, 1940, in the Temple University Hospital, Philadelphia, of coronary occlusion.

Thomas Bedford Richardson, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1890; Victoria University Medical Department, Coburg, Ont., 1890; F.R.C.S., Edinburgh, 1894; served with the Canadian Army during the World War; member of the Pensions Commission from 1917 to 1929; on the staff of the Christie Street Hospital; aged 72; died, Dec. 1, 1940.

Timothy M. Ryan, Torrington, Conn.; Baltimore Medical College, 1902; member of the Connecticut State Medical Society; past president of the Litchfield County Medical Society; formerly police and fire department surgeon; on the staff of the Charlotte Hungerford Hospital; aged 67; died, Dec. 16, 1940, in St. Mary's Hospital, Waterbury, of bronchopneumonia and nephritis.

John Joseph Decker ● Sioux City, Iowa; University of Wisconsin Medical School, Madison, 1931; police surgeon; at one time assistant superintendent of the Lakeville State Sanatorium, Middleboro, Mass.; aged 36; died, Dec. 18, 1940, in St. Joseph's Mercy Hospital of cerebral hemorrhage following an automobile accident in November.

Arthur H. Burleson, Olivet, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1896; member of the Michigan State Medical Society; past president and secretary of the Eaton County Medical Society; on the staff of the Hayes-Green Memorial Hospital, Charlotte; aged 79; died, Dec. 17, 1940, of heart disease.

Clark E. Congdon, Fort Plain, N. Y.; Long Island College Hospital, Brooklyn, 1890; member of the Medical Society of the State of New York; past president of the Montgomery County Medical Society; on the staff of the Amsterdam (N. Y.) City Hospital; county coroner; aged 72; died, Nov. 25, 1940, of carcinoma of the rectum.

Charles Oliver DeLaney ● Winston-Salem, N. C.; Jefferson Medical College of Philadelphia, 1919; member of the American Urological Association; fellow of the American College of Surgeons; on the staff of the City Memorial Hospital; aged 45; died, Dec. 15, 1940, of coronary occlusion.

Harvey Sprague Chapman, Pontiac, Mich; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1885; president of the board of education; formerly mayor, health officer, county physician and bank president; aged 79; was killed, Dec. 31, 1940, in an automobile accident.

William Abraham McBride, Indianapolis; Indiana University School of Medicine, 1909; member of the Indiana State Medical Association; served during the World War; aged 64; formerly on the staff of St. Vincent's Hospital, where he died, Dec. 14, 1940, of coronary thrombosis.

Immanuel Pyle, Jersey City, N. J.; Columbia University College of Physicians and Surgeons, New York, 1898; medical supervisor of the city public school system; on the staff of the Medical Center of Jersey City; aged 65; died, Dec. 30, 1940, of a skull fracture received in a fall.

Thomas Joseph Smith, Cranston, R. I.; College of Physicians and Surgeons, Baltimore, 1884; member of the Rhode Island Medical Society; on the staff of the Homeopathic Hospital, Providence; aged 82; died, Nov. 19, 1940, of arteriosclerosis, diabetes mellitus and gangrene.

Samuel Davis Robinson, Clarksdale, Miss.; University of Tennessee College of Medicine, Memphis, 1914; member of the Mississippi State Medical Association; aged 62; on the staff of the Clarksdale Hospital, where he died, Dec. 26, 1940, of coronary occlusion.

Clyde Benson Conger, San Jose, Calif.; Stanford University School of Medicine, San Francisco, 1935; member of the California Medical Association; aged 30; died, Dec. 18, 1940, in a hospital at San Francisco of uremia, amyloid disease and chronic ulcerative colitis.

Furman Leaming Pyke ● La Fayette, Ind.; Indiana University School of Medicine, Indianapolis, 1913; served during the World War; aged 52; on the staffs of St. Elizabeth Hospital and the Home Hospital, where he died, Dec. 24, 1940, of poliomyelitis.

Edmund Buckner Sweeney, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1904; on the staffs of the Stetson Hospital and St. Mary's Hospital; aged 58; died, Dec. 25, 1940, in the Jefferson Hospital of pneumonia.

Ira Clifford Duncan, Beaver Falls, Pa.; University of Pittsburgh School of Medicine, 1912; member of the Medical Society of the State of Pennsylvania; aged 59; died, Dec. 30, 1940, in the Rochester (Pa.) General Hospital of metastatic carcinoma.

Samuel Ashton Bonnaffon ● Wilmington, Del.; Jefferson Medical College of Philadelphia, 1887; University of Pennsylvania Department of Medicine, Philadelphia, 1888; aged 73; died, Dec. 28, 1940, in the Delaware Hospital of carcinoma of the cecum.

Linn Van der Heyden Reed, New York; Cornell University Medical College, New York, 1917; served during the World War; aged 50; died, Dec. 22, 1940, in the New York Hospital, Westchester Division, White Plains, N. Y., of coronary thrombosis.

Robert Brodie, Owensboro, Ky.; Medico-Chirurgical College of Philadelphia, 1899; aged 66; died, Dec. 27, 1940, in the Norton Memorial Infirmary, Louisville, of pneumonia following an operation for removal of an oyster shell from his esophagus.

Henry Franklin Schamel, Baltimore; University of Maryland School of Medicine, Baltimore, 1897; aged 68; died, Dec. 29, 1940, in the University of Maryland Hospital of carcinoma of the esophagus and arteriosclerotic cardiovascular disease.

Frank Wilburn Dudley, Manila, Philippine Islands; University of California Medical Department, San Francisco, 1895; fellow of the American College of Surgeons; visiting surgeon, St. Joseph's Hospital; aged 72; died in December 1940.

Erastus Lafayette Walker ● Magee, Miss.; University of Nashville (Tenn.) Medical Department, 1900; past president of the Central Medical Society; aged 67; on the staff of the Magee General Hospital, where he died, Dec. 18, 1940.

William Robert Abbott ● Chicago; Northwestern University Medical School, Chicago, 1911; fellow of the American College of Surgeons; on the staff of the Englewood Hospital; aged 55; died, Dec. 21, 1940, of coronary occlusion.

Samuel Hutchings Price, Montvale, Va.; Bellevue Hospital Medical College, New York, 1876; member of the Medical Society of Virginia; for many years bank president; aged 88; died, Dec. 14, 1940, of uremia and myocarditis.

Joseph Merle Cowen, Glenwood, Iowa; University of Nebraska College of Medicine, Omaha, 1933; member of the Iowa State Medical Society; aged 35; died, Dec. 9, 1940, of injuries received in an automobile accident.

Robert Erle Evans, Ada, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1934; member of the Oklahoma State Medical Association; aged 31; was killed, Dec. 31, 1940, in an automobile accident.

Alfred Dannhauser ● New York; Eberhard-Karls-Universität Medizinische Fakultät, Tübingen, Württemberg, Germany, 1920; on the staff of the Mount Sinai Hospital; aged 46; died, Dec. 16, 1940, of heart disease.

George Oliver Evans, Miami Beach, Fla.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; formerly on the staff of the Uniontown (Pa.) Hospital; aged 66; died, Dec. 24, 1940, of heart disease.

Charles Wesley Le Fever ● Philadelphia; Jefferson Medical College of Philadelphia, 1897; aged 71; on the staff of the Jefferson Hospital, where he died, Dec. 17, 1940, of carcinoma of the esophagus with metastasis.

Thomas Jefferson Henry ● Detroit; Trinity Medical College, Toronto, Ont., Canada, 1899; aged 79; on the staff of the Grace Hospital, where he died, Dec. 24, 1940, of hypostatic pneumonia and acute bronchitis.

Arthur Burr Coleburn ● Norwalk, Conn; College of Physicians and Surgeons, medical department of Columbia College, New York, 1890; aged 77; died, Nov. 5, 1940, of myocarditis and arteriosclerosis.

Vittorio Risicato, New York; Regia Università degli Studi di Catania, Facoltà di Medicina e Chirurgia, Italy, 1905; aged 57; was found dead, Dec. 17, 1940, of an overdose of morphine, self administered.

Mary Law Burgess-Barrow King, Chattanooga, Tenn.; Woman's Medical College of Baltimore, 1890; for many years a medical missionary in China; aged 71; died, Sept. 14, 1940, in California of tuberculosis.

Albert D. Wehinger, Kingman, Kan.; Fort Worth School of Medicine, Medical Department of Texas Christian University, 1913; aged 62; died, Nov. 10, 1940, of a malignant growth with metastases to the lung.

Edwin J. Kuh ● Chicago; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1882; an Affiliate Fellow of the American Medical Association; aged 82; died, Dec. 31, 1940, of heart disease.

Malcolm Benton Boone, Mount Victory, Ohio; Rush Medical College, Chicago, 1890; formerly member of the board of education and county board of health; aged 73; died, Dec. 22, 1940, of heart disease.

Vincent John Hawkins ● St. Paul; Rush Medical College, Chicago, 1881; an Affiliate Fellow of the American Medical Association; aged 85; died, Dec. 11, 1940, of valvular heart disease.

William R. Ross, Mount Vernon, Ill.; College of Physicians and Surgeons, Baltimore, 1880; member of the Illinois State Medical Society; aged 86; died, Dec. 19, 1940, of heart disease.

Ralph E. Cummings ● Bentleyville, Pa.; University of Pittsburgh School of Medicine, 1908; aged 55; died, Dec. 28, 1940, in the Mercy Hospital, Pittsburgh, of roentgen ray burns.

William F. Cathcart, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; aged 68; died in December 1940 of arteriosclerosis.

Albert F. Houck, Chilesburg, Va.; College of Physicians and Surgeons, Baltimore, 1884; member of the Medical Society of the State of North Carolina; aged 83; died, Dec. 4, 1940.

Alfred R. Cobbs ● Damascus, Ohio; Miami Medical College, Cincinnati, 1893; aged 75; died, Dec. 26, 1940, in the Central Clinic and Hospital, Salem, of perforated duodenal ulcer.

Uel Keith, Fort Worth, Texas (licensed in Texas by years of practice); at one time health officer of Erath County; aged 72; died, Dec. 18, 1940, in Midland of coronary thrombosis.

John Serbert Johnson, White Salmon, Wash.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1880; aged 84; died, Dec. 5, 1940, of bronchopneumonia.

Rebel J. Brown, Gatesville, Texas; Memphis (Tenn.) Hospital Medical College, 1896; aged 70; died, Dec. 20, 1940, of cerebral hemorrhage.

Claude Melnotte Wade, Chicago; Louisville (Ky.) National Medical College, 1891; aged 77; died, Dec. 26, 1940, of cerebral hemorrhage.

Albert Eliphalt Cotes, Springfield, Ohio; Ohio Medical University, Columbus, 1900; aged 66; died in December 1940.

Morris Richman, Philadelphia; Medico-Chirurgical College of Philadelphia, 1908; aged 64; died, Dec. 22, 1940, of pneumonia.

Edwin Dorsey Abraham, Los Angeles; Rush Medical College, Chicago, 1918; aged 49; died, Dec. 17, 1940, of uremia.

Joe Brown Acree ● Paducah, Ky.; Kentucky School of Medicine, Louisville, 1905; aged 63; died, Dec. 27, 1940.

Janette Baldwin ● Brooklyn; Cornell University Medical College, New York, 1901; aged 68; died, Dec. 17, 1940.

Joseph J. Pittman, Charles Town, W. Va.; Baltimore Medical College, 1891; aged 81; died, Dec. 19, 1940.

Walter R. Reed, Jesup, Ga.; Atlanta College of Physicians and Surgeons, 1899; aged 63; died in November 1940.

Oscar K. Hukill, Egypt, Ark.; Barnes Medical College, St. Louis, 1903; aged 67; died, Dec. 14, 1940.

William T. Spears, Rutledge, Ga.; Atlanta Medical College, 1884; aged 86; died, Dec. 7, 1940.

Correspondence

ACETYLSALICYLIC ACID DEATHS

To the Editor:—I note in THE JOURNAL of January 11, page 145, the article about deaths from acetylsalicylic acid. In the village of Vandalia, Mich., 5 miles from Cassopolis, is a man who has been a chronic invalid suffering from arthritis deformans for more than twenty years. For seventeen years he has been confined to the use of a wheel chair. The records indicate, and the facts are supported by members of his family, that he has been taking 125 grains (8 Gm.) of aspirin daily for seventeen years without any apparent harmful effects. His family say that they have been unable to reduce the amount.

E. M. CUNNINGHAM, M.D., Cassopolis, Mich.

SEMANTICS OR THE TYRANNY OF WORDS

To the Editor:—I note in the January 18 issue of THE JOURNAL Dr. Ramsay Spillman's comments on the use of initials in his own specialty and further his distaste for the use of EKG, though as he states "out of his own field." To him it suggests a Teutonic flavor.

I was one of the earlier students of the electrocardiograph in this country and the first to establish a modern cardiac laboratory in the state of New Jersey. It never occurred to me, however, that there was a Teutonic flavor to the initials EKG, for as a matter of fact the K might as well be Dutch. My knowledge of this language is practically nil, but I depend on the fact that while temporarily acting as ship's surgeon on a Dutch liner the sign on my office door read "Dokter."

We all have our antipathies, and I mention here one among several. It is the misuse of the word "clinic." To the medical man it suggests instruction at the sick bed, and rightly so for it is derived from the Greek word *kline*, meaning bed. However, today one reads of cooking clinics, real estate clinics, clinics for living, automobile clinics and so on "ad infinitum" and, for the medical man, "ad nauseam."

HENRY WALLACE, M.D., New York.

ROENTGEN EXAMINATION OF GASTRO-INTESTINAL TRACT

To the Editor:—In the communication by Dr. Ramsay Spillman in THE JOURNAL, January 18, referring to the first two paragraphs concerning "A complete g-i examination," I am prompted to ask Why an incomplete g-i examination? Failure to follow a barium sulfate meal through the entire gastrointestinal tract has always seemed a deplorable waste of valuable clinical material. A complete study may prevent mistakes or reveal coincidental disease. In cases of suspected disease of the lower portion of the bowel mistakes will be reduced if both barium meal and enema are observed.

The gastrointestinal tract is, and should be considered as, a physiologic unit. Failure to detect a pathologic condition in this tract (with history and symptoms justifying a gastrointestinal roentgen examination) calls for a cholecystogram.

Complete gastrointestinal roentgen examinations will be less frequently misinterpreted if test meal and stool examinations are routine preliminaries.

These remarks do not pertain to "Diction and Terminology" but are related to the subject of roentgen examinations of the gastrointestinal tract and their correct interpretation.

GREGORY CONNELL, M.D., Oshkosh, Wis.

Medical Examinations and Licensure

COMING EXAMINATIONS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, February 15, page 647.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various centers, June 23-25. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* Part II, Cleveland, May 31-June 1. Final date for filing application is April 1. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* April, in advance of the meeting of the American College of Physicians and June, in advance of the meeting of the American Medical Association. *Written.* Oct. 20. Final date for filing application is Sept. 1. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Philadelphia, June 6-7. Sec., Dr. R. Glen Spurling, 404 Brown Bldg., Louisville, Ky.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Part II, Groups A and B, Cleveland, May 28-June 1. Final date for filing application is March 15. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* Cleveland, May or June. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral and Written.* Cleveland, May 31-June 2. Final date for filing application is March 1. Sec., Dr. W. P. Wherry, 1500 Medical Arts Building, Omaha.

AMERICAN BOARD OF PATHOLOGY: *Oral and Written.* Cleveland, June 2-3. Final date for filing application is May 1. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PEDIATRICS: Chicago, May 18, following the Region III meeting of the American Academy of Pediatrics. Boston, Oct. 12, immediately following the annual meeting of the American Academy of Pediatrics. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF RADIOLOGY. *Oral.* Cleveland, May 30-June 1. Final date for filing application is April 15. Sec., Dr. Byrl R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: Written. Part I. Various centers, April 2. Sec., Dr. J. Stewart Rodman, 225 South Fifteenth St., Philadelphia.

Georgia October Report

Mr. R. C. Coleman, joint secretary, Georgia State Board of Medical Examiners, reports the written examination for medical licensure held at Atlanta, Oct. 8-9, 1940. The examination covered 10 subjects and included 100 questions. An average of 80 per cent was required to pass. Five candidates were examined, all of whom passed. Eleven physicians were licensed to practice medicine by reciprocity and 1 physician was so licensed by endorsement. The following schools were represented:

PASSED School	Year Grad.	Per Cent
Emory University School of Medicine	(1938)	86.2
Rush Medical College	(1940)	86.5
Tulane University of Louisiana School of Medicine	(1940)	83.7
Univ. of Rochester School of Medicine and Dentistry	(1940)	83.6
University of Toronto Faculty of Medicine	(1938)	87.3

LICENSED BY RECIPROCITY School	Year Grad.	Reciprocity with
Indiana University School of Medicine	(1924), (1936)	Indiana
State University of Iowa College of Medicine	(1939)	Iowa
Tulane University of Louisiana School of Medicine	(1932) (1937), (1938)	Tennessee, Louisiana
Johns Hopkins University School of Medicine	(1932)	Maryland
Tufts College Medical School	(1914)	Maine
University of Tennessee College of Medicine	(1939)	Tennessee
University of Texas Faculty of Medicine	(1939, 2)	Texas

LICENSED BY ENDORSEMENT School	Year Grad.	Endorsement of
Rush Medical College	(1929)	N. B. M. Ex.

Montana October Report

Dr. S. A. Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination for medical licensure held at Helena, Oct. 1-2, 1940. The examination covered 10 subjects. An average of 75 per cent was required to pass. Four candidates were examined, all of whom passed. Seventeen physicians were licensed to practice medicine by reciprocity and 1 physician so licensed by endorsement. The following schools were represented:

PASSED School	Year Grad.	Per Cent
University of Southern California School of Medicine	(1940)	82.8
University of Illinois College of Medicine	(1935) 80.1, (1939)	84.6
Temple University School of Medicine	(1940)	82.4

School	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
College of Medical Evangelists	(1939)	California
Loyola University School of Medicine	(1938)	Minnesota
Northwestern University Medical School	(1938)	Ohio
Rush Medical College	(1939)	Oregon
State University of Iowa College of Medicine	(1938), (1939)	Iowa
University of Kansas School of Medicine	(1923)	Kansas
University of Michigan Medical School	(1936)	Michigan
University of Minnesota Medical School	(1939), (1940)	Minnesota
St. Louis University School of Medicine	(1913)	Arizona,
	(1914), (1939)	Missouri
Creighton University School of Medicine	(1933), (1936)	Nebraska
University of Nebraska College of Medicine	(1925)	Nebraska
University of Texas School of Medicine	(1930)	Texas

School	Year Grad.	Endorsement of
LICENSED BY ENDORSEMENT		
University of Minnesota Medical School	(1940)	N. B. M. Ex.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice—Alleged Concealment of Sponge as Toll to Running of Statute of Limitations.—The defendant physician, in December 1934, performed an operation on one of the plaintiff's arms. In the course of the operation he unknowingly failed to remove a gauze sponge which had been inserted, and he sewed up the operative wound with the sponge still retained therein. He ceased treating the plaintiff in March 1935 and never examined him thereafter except once in June 1937. In October 1937, another operation was performed on the plaintiff's arm by other physicians and the sponge was then discovered. In October 1938, the plaintiff brought suit against the defendant for malpractice. From a judgment for the plaintiff the defendant appealed to the United States circuit court of appeals, fourth circuit.

The only question which the court was called on to decide was whether or not the plaintiff's action for malpractice was barred by the West Virginia statute of limitations, which requires that such actions be commenced within one year after the right to bring the same shall have accrued. The plaintiff contended that the statute does not run in favor of a party who has, by some act of his own, concealed the cause of action from the knowledge of the injured party. He argued that when the defendant sewed up the wound with the sponge inside he so concealed it that the plaintiff was unable to discover its presence until the subsequent operation in October 1937 and that therefore the statute of limitations would not commence to run until the latter date. The circuit court of appeals held that a right of action accrues when the wrong is committed and, in the absence of some act of intentional concealment by the wrong doer, the mere ignorance of the injured party of the actionable wrong will not suspend the statute. The court admitted that the action of the defendant in sewing up the incision in the plaintiff's arm did conceal the sponge and prevent the plaintiff from discovering that it had been left in the wound, but it held that such conduct was in no sense an act designed or intended to conceal liability or prevent or delay suit. Since there was no evidence of a fraudulent concealment, therefore, the court held that the action should have been commenced within one year of the defendant's last treatment, which the plaintiff had failed to do. Accordingly, the judgment for the plaintiff was reversed.—*Pickett v. Aglinsky, 110 F. (2d) 628 (1940).*

Osteopathy: Right of Osteopath in California to Be Granted a "Health and Development Certificate."—Prior to 1922 the statutes of California provided for the issuance, by the California state board of education, the defendant in this case, of health and development credentials to any one holding a certificate to practice medicine and surgery issued by the California state board of medical examiners. These credentials qualified the holder to perform certain health services connected with the public school system. At that time the state board of medical examiners was the sole licensing agency for practitioners of all schools of healing, including osteopaths. Accordingly the state board of education, without question, issued certificates of health and development to any osteopath who had been properly licensed by the state board of medical examiners. On Dec. 21, 1922, however, the state of California passed an initiative measure which set up a separate and exclusive licensing board for practitioners of osteopathy known as the state board of osteopathic examiners. After that date the state board of education refused to issue credentials of health and development to any osteopath who held a license granted by the state board of osteopathic examiners. Consequently, in 1930 the state board of education refused to issue such credentials to the plaintiff osteopath, who had been licensed by the state board of osteopathic examiners, because he did not present a certificate to practice medicine and surgery issued by the state board of medical examiners. The plaintiff, therefore, filed a petition for a writ of mandamus to compel the defendant board to issue him a "health and development credential." From a judgment for the plaintiff, the defendant appealed to the district court of appeal, third district, California.

The defendant board admitted that the initiative resulted in no change so far as the requirements and qualifications of an osteopath were concerned but contended that it was justified in refusing to issue the requested certificate since the education law had not been changed but still required a certificate of licensure from the state board of medical examiners. The court held, however, that the legislative intent indicated that the plaintiff should not be deprived of his right to the certificate here sought simply because a board other than the state board of medical examiners was authorized to license osteopaths. Prior to the initiative act of 1922 there was no legislative discrimination between the graduates of medical and osteopathic schools. The only effect of the 1922 act, continued the court, was to change the name of the licensing body. It was not the intent of the legislature, in separating the power to issue osteopathic licenses, to destroy the power of the state board of education to issue credentials to osteopaths licensed by the state board of osteopathic examiners. The court concluded, therefore, that the plaintiff osteopath was entitled to the credentials which he sought. Accordingly the judgment of the lower court, ordering the defendant board to issue these credentials to the plaintiff, was affirmed.—*Jordt v. California State Board of Education, 96 P. (2d) 809 (Calif., 1939).*

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, Apr. 15-17. Dr. D. L. Cannon, 519 Dexter Ave., Montgomery, Secretary.

American Association of Anatomists, Chicago, Apr. 9-11. Dr. E. R. Clark, Dept. of Anatomy, University of Pennsylvania School of Medicine, Philadelphia, Secretary.

American Association of Pathologists and Bacteriologists, New York, Apr. 10-11. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Dermatological Association, New Orleans, Apr. 7-11. Dr. Harry R. Foerster, 208 East Wisconsin Ave., Milwaukee, Secretary.

American Physiological Society, Chicago, Apr. 16-19. Dr. Philip Bard, 710 North Washington St., Baltimore, Secretary.

American Society for Experimental Pathology, Chicago, Apr. 15-18. Dr. Harry P. Smith, Dept. of Pathology, University of Iowa, Iowa City, Secretary.

American Society for Pharmacology and Experimental Therapeutics, Chicago, Apr. 15-19. Dr. G. Philip Grabfield, 319 Longwood Ave., Boston, Secretary.

American Society of Biological Chemists, Chicago, Apr. 15-19. Dr. C. G. King, Dept. of Chemistry, University of Pittsburgh, Secretary.

Arizona State Medical Association, Phoenix, Apr. 16-19. Dr. W. Warner Watkins, 15 East Monroe St., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, Apr. 14-16. Dr. William R. Brockshier, 602 Garrison Ave., Fort Smith, Secretary.

Central Surgical Association, Ann Arbor, Mich., Feb. 28-March 1. Dr. George M. Curtis, Ohio State University, Columbus, Ohio, Secretary.

Federation of American Societies for Experimental Biology, Chicago, Apr. 15-19. Dr. D. R. Hooker, 19 West Chase St., Baltimore, Secretary.

Northern Tri-State Medical Association, Tiffin, Ohio, Apr. 8. Dr. E. Benjamin Gillette, 320 Michigan St., Toledo, Ohio, Secretary.

South Carolina Medical Association, Greenville, Apr. 15-17. Dr. Julian P. Price, 105 West Cheves St., Florence, Secretary.

Southeastern Surgical Congress, Richmond, Va., March 10-12. Dr. Benjamin T. Beasley, 45 Edgewood Ave., S.E., Atlanta, Ga., Secretary.

Tennessee State Medical Association, Nashville, Apr. 8-10. Dr. H. H. Shoulders, 706 Church St., Nashville, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1931 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

44:805-962 (Dec.) 1940

Roentgen Kymographic Evaluation of Size and Function of Heart. A. Keys, H. L. Friedell, New York; L. H. Garland, San Francisco; M. F. Madrazo, and L. G. Rigler, Minneapolis.—p. 805.
Roentgen Appearance of Enlarged Left Auricle in Patients with Mitral Disease (in Frontal Position). D. Routier and R. Heim de Balsac, Paris, France.—p. 834.
Origin of Tumors Occurring in Apex of Lung. W. C. Hall, Hartford, Conn.—p. 838.
"Cystic" Disease of Lung. C. B. Peirce, Montreal, Canada.—p. 848.
Spontaneous Pneumoperitoneum in Perforated Peptic Ulcer: Roentgen Analysis of Forty-Four Cases. L. T. Thaxter, Portland, Maine.—p. 853.
Correlation of Roentgen and Blood Examinations in Multiple Myeloma. W. J. Marquis, Newark, N. J.—p. 858.
*Treatment of Advanced and Recurrent Carcinoma of Breast. W. S. Peck, H. K. Ransom and F. J. Hodges, Ann Arbor, Mich.—p. 866.
Radiation Treatment of Giant Follicular Lymphadenopathy and Its Polymorphous Cell Sarcoma Derivative (Symmers' Disease). S. Rubenfeld, New York.—p. 875.
Benign Giant Cell Tumor of Bone: Five Year Cure. L. Edelken, Philadelphia.—p. 884.
Teratoma (Mixed Tumor) of Right Parotid Gland with Metastasis to Sternum and Second Rib Left: Case Report. S. K. Livingston, Hines, Ill.—p. 887.
Measurement of Gamma Radiation in Roentgens. T. N. White, L. D. Marinelli and G. Failla, New York.—p. 889.

Treatment of Carcinoma of Breast.—According to Peck and his associates, a review of the case records of all patients with mammary cancer admitted to the University Hospital from 1931 to 1938 emphasizes the importance of providing care to patients with advanced (inoperable) or recurrent carcinomas. Of 920 consecutive admissions suitable for study 514 patients had received no prior treatment, and of these 163 (31.7 per cent) were inoperable. Of 162 patients who had been treated prior to admission by some method other than radical surgery 86 were no longer operable. The cancers of 244 patients had been removed by radical mastectomy at some time prior to their admission, and of these 63 showed no demonstrable recurrence or distant metastases while 181 had local recurrences and distant metastases and were inoperable. Therefore at the time of admission among 920 patients there were 430, or 46.6 per cent, for whom nothing more than palliative treatment could be offered. Also a number of patients classified as "operable" when first examined returned at a later date with recurrences or metastases following initial treatment at the hospital. On the basis of this, more than one half (56.1 per cent) of all patients with mammary carcinoma were considered inoperable. As time goes on further recurrences may be expected. Fixation of the tumor to the thoracic wall, metastases, widespread cutaneous involvement, high degree of malignancy, extensive ulceration with infection and associated pregnancy contraindicate radical surgical intervention. The immediate treatment of such cases is irradiation. Surgery has little to offer for the inflammatory type of carcinoma or "cancerous mastitis" in which the entire breast becomes uniformly enlarged and firm with considerable cutaneous edema. In the management of such a case the best chance for relief is intensive external irradiation, and more than the usual amount of apparently normal skin should be irradiated because of invisible lymphatic extensions. Irradiation of complicating ulcerations by the divided dose method is usually followed by a definite and rapid decrease of the tumor and also a similar decrease in the infection. Some patients have received as much as 3,000 roentgens (fractionated) to areas greater than 100 sq. cm. Surgical removal of the residual local carcinoma and ulcer may be considered from six to eight weeks after radiation therapy is completed. There were 10 patients among the 920 who were considered as having two breast primaries; the incidence of more than one primary cancer of any type was 3.3 per cent. Local recurrences after mastectomy have already occurred among 54 of 351 patients. Often multiple small subcutaneous nodules of carcinoma arise almost simultaneously in and about the scar, soon followed by similar small nodules throughout the wall of the chest. It is not practical to excise or to irradiate these individual lesions. As a palliative measure, large portals extending well beyond the evident lesions are used and single doses of from 600 to 900 roentgens are applied to each portal (half-value layer = 5 mm. of aluminum and a focal skin distance of 50 cm.). Such doses may be repeated in from two to three months if necessary. For the recurrence that tends to remain localized in the scar, continuously increasing in size until large, hard, nodular masses are formed and ulceration occurs and does not exceed 2 cm. in diameter, from 1,000 to 1,500 roentgens (half-value layer of 5 mm. of aluminum and portals not to exceed 10 sq. cm.) may be applied on three consecutive occasions or a topical application of radium may be used. This treatment usually destroys the local carcinoma and may be effective if the growth is not present in the rest of the scar. Such treatment should not be repeated to the same area. When these lesions are more extensive, the same dose may be delivered to areas up to 50 sq. cm. These doses may be repeated in a few months. Another type of local recurrence resembles the inflammatory form of primary mammary cancer, in which many foci of carcinoma rapidly appear about the scar or other residual focus and soon spread by lymphatic extension in all directions across the wall of the chest. The prognosis in these recurrences is poor, as the carcinoma is usually extending at a similar rate in other parts of the body. Irradiation of the chest may retard the local lesion, but it does not seem to alter the final result. For local recurrence in an unoperated breast previously treated with intensive irradiation the roentgen dose must be reduced because the surrounding normal tissues will not always recover from a second application of heavy radiation. It seems wise to remove the breast whenever possible after the first irradiation and not delay until local recurrence is evident.

Archives of Ophthalmology, Chicago

25:1-190 (Jan.) 1941

Leptotrichosis Conjunctivae (Parinaud's Conjunctivitis) Without Glandular Involvement: Report of Case. F. H. Verhoeff, Boston.—p. 1.
Striae Retinae. A. Hagedoorn, Amsterdam, Netherlands.—p. 7.
Microscopic Study of Central Lens Capsule in Glaucoma Capsulare. E. E. Blaauw, Buffalo.—p. 12.
Vitreous, Zonule and Ciliary Processes from Surgical Point of View, Especially with Regard to Operations for Cataract and Detachment of Retina. G. L. Johnson, Durban, Natal, Union of South Africa.—p. 25.
Seasonal Variations in Lipid Content of Crystalline Lenses, with Special Reference to Influence of Sunshine and Humidity. P. W. Salit, Iowa City.—p. 32.
Oculists and Occultists: Astrology and Eye. B. L. Gordon, Atlantic City, N. J.—p. 36.
Experimental Studies of Ocular Tuberculosis: VI. Effect of Sensitivity and Immunity on Experimental Lesions of Ocular Tuberculosis. A. C. Woods and E. L. Burky, Baltimore.—p. 62.
Birth Injury of Cornea with "Glass Membrane" in Anterior Chamber: Report of Case. C. A. Perera, New York.—p. 75.
Conjunctivitis in Erythema Exudativum Multiforme: Report of Three Cases. M. P. Koke, Iowa City.—p. 78.
Gelatinous Cancer of Choroid Following Carcinoma of Rectum: Report of Case. L. von Sallmann, New York.—p. 89.
Congenital Retinal Folds and Microcephaly: Report of Case. S. Gartner, New York.—p. 93.
Rickettsia-like Organism of Conjunctival Epithelium of Pigs. J. D. W. A. Coles, Onderstepoort, Union of South Africa.—p. 101.
*Role of Anoxia in Production of Episcleritis and Scleritis: Treatment with Vasodilators. W. F. Duggan, Utica, N. Y.—p. 113.
Necrosis of Cornea Due to Vitamin A Deficiency: Report of Case. H. K. Goldberg and K. Schliwek, New York.—p. 122.
Visual Field Defects Associated with Cerebellar Tumors. L. M. Weinberger, Chicago, and J. E. Webster, Philadelphia.—p. 128.
Problem of Diabetic Retinitis. H. Elwyn, New York.—p. 139.

Anoxia in Production of Episcleritis and Scleritis.—Duggan states that the early changes in episcleritis and scleritis are basically similar to those of acute retrobulbar neuritis, acute exudative choroiditis, acute iritis, iridocyclitis, cyclitis and acute closure of the central retinal artery or one of its branches. The early pathologic picture can be ascribed to increased capillary permeability and arteriolar spasm, with resulting tissue anoxia. The early pathologic change consists of localized edema and

round cell infiltration. In severe cases in which the localized anoxia is of sufficient intensity and duration, focal necroses occur. The focal nature of these lesions must be due to a hypersensitivity of one or more arteriolar-capillary units, which accounts for the sharply localized lesions. Substances which act on the capillaries and/or on the arterioles are possible etiologic agents. Capillary permeability is increased beyond physiologic limits by lack of available oxygen in the circulating blood, by lack of ascorbic acid, by histamine, by certain drugs and by spasm of the arterioles supplying the involved capillaries. Also thiamine, nicotinic acid and riboflavin seem to be concerned with oxidative processes in the body. In cases in which the condition is ascribed to menstruation it is said to be due to an excess or deficiency of certain hormones in the blood. Other factors may be temporary alkalosis, allergy, tuberculosis, and so on. All such conditions can be interpreted as manifestations of acute localized tissue anoxia due to varying degrees of arteriolar spasm and increased capillary permeability accompanied by capillary and venular dilatation. Many of the etiologic factors are of endogenous origin and become operative because of temporary failure of homeostatic mechanisms within the body. Multiple etiologic factors are probably operative in most cases. As vasodilator therapy has been of value in the treatment of other lesions of vascular dysfunction, the author used 0.1 Gm. of sodium nitrite intravenously and 15 or 30 mg. of erythrityl tetranitrate orally for 5 cases of episcleritis and scleritis. Treatment effected a rapid amelioration of signs and symptoms in from three to eight days. The treatment is based on a consideration of the pathologic physiology which caused the lesions. Patients may not all be helped, but the therapy is indicated for conditions formerly attributed to allergy, focal infection, exposure to cold or tuberculosis. Vasodilator therapy increases the supply of oxygen-containing blood to the anoxic capillaries and tissues. Tissue anoxia is relieved, capillary permeability is decreased, absorption of exudate occurs and anatomic and functional states return to normal, if the tissue anoxia has not lasted too long.

Archives of Surgery, Chicago

42:1-202 (Jan.) 1941

Hydatid Disease (Hydatidosis): Pathology and Treatment. J. Arce, Buenos Aires, Argentina.—p. 1.
*Pernicious Anemia Following Total Gastrectomy. K. A. Meyer, S. O. Schwartz and L. H. Weissman, Chicago.—p. 18.
*Some Factors in a Lowered Mortality Rate for Acute Appendicitis: Analysis of 2,013 Consecutive Cases. L. Rumbold, Rochester, N. Y. —p. 25.
Cytology of Gastric Contents, with Special Reference to Gastritis. R. E. Mulroney and G. B. Eusterman, Rochester, Minn.—p. 55.
*General Abdominal Lymphadenopathy, with Special Reference to Nonspecific Mesenteric Adenitis. A. O. Wilensky, New York.—p. 71.
Experimental Bile Pancreatitis, with Special Reference to Recovery and to Toxicity of Hemorrhagic Exudate. C. Ireneus Jr., Chicago.—p. 126.
Carcinoma of Pancreas. J. T. Kauer and F. Glenn, New York.—p. 141.
Primary Appendical Abscesses. N. F. Hicken and J. H. Carlquist, Salt Lake City.—p. 156.
Seventy-Third Report of Progress in Orthopedic Surgery. J. G. Kuhns, R. J. Joplin, W. A. Elliston, G. Bailey, J. A. Reidy, Boston; W. B. Sheppard, G. N. Boice, Wilmington, Del.; F. E. Ilfeld, Los Angeles, and R. Perlman, Cincinnati.—p. 172.

Pernicious Anemia Following Total Gastrectomy.—Meyer and his co-workers report a case of pernicious anemia five years after total gastrectomy. The case, besides illustrating the usual points stressed in the literature, emphasizes the insidious onset, the necessity of indefinite observation and the specificity of liver therapy. The authors followed the case, though intermittently, from the time of resection until the pernicious anemia appeared. The bone marrow was studied before and after liver therapy. The patient's cure was of short duration, as four months after his discharge from the hospital he was readmitted because of having drunk saponated solution of cresol and died within forty-eight hours. Necropsy revealed gangrenous esophagitis and enterocolitis, edema and cloudy swelling of the viscera, acute glomerulonephritis and an anatomically adequate esophagojejunal stoma with considerable dilatation of the jejunum. Also there was marked redness and hypertrophy of the bone marrow, which microscopically showed extreme hyperplasia. The erythrocyte development had reverted to megaloblastic maturation. The bone marrow, studied before and after liver therapy, showed, respectively, the classic changes of untreated and treated pernicious anemia. The first specimen showed extreme hyperplasia with marked preponderance of erythroid elements, a "left shift," a megaloblastic type of erythrocyte maturation, granulocyte maturation, and many primitive cells and mitotic figures. Sixteen days after the beginning of liver therapy it was still hyperplastic, but the erythroid elements showed a relatively decreased hyperplasia. Both erythroid and granulocytic maturation had reverted to normal, and the excess of primitive cells and mitotic figures had disappeared.

Mortality in Acute Appendicitis.—Rumbold analyzes the factors contributing to the lowered mortality in 2,013 consecutive cases of proved acute appendicitis observed at the Genesee Hospital between 1925 and 1938. The mortality, as reported by various workers, from acute appendicitis is between 2.16 and 8.5 per cent. Since 1930, when there were 133 proved cases of acute appendicitis at the hospital with a mortality rate of 6.01 per cent, the number of cases has increased 25 per cent and the mortality rate has decreased yearly until 1938, during which year there were 199 cases with a death rate of 0.5 per cent. Study of the factors that have contributed to the reduced rate shows that attention to the following principles may further reduce the mortality: 1. Continued education of the public against delay in calling a physician in the presence of abdominal upsets. 2. Continued education of physicians and surgeons so as to keep them appendicitis conscious, insuring early diagnosis and operation in the first twelve hours. This is particularly necessary in patients less than 10 and more than 40 years of age. The policy of "watchful waiting" has proved disastrous in these cases. 3. Preoperative preparation of the patient who is acutely ill. 4. A well conceived preoperative plan of treatment, which includes evaluation of the stage of appendicitis which will bear on the decision between immediate operation and delay, and on the choice of an anesthetic, the proper incision and the limitations of surgical intervention. 5. Postoperatively, further involvement should be anticipated and those procedures which will aid in combating it should be used. These are attention to fluid balance; use of the duodenal tube to combat nausea, vomiting and distention, and avoidance of fluid or food by mouth or of futile enemas before intestinal tone is restored. Morphine in sufficient amounts to produce its physiologic action is to be given and the patient's condition gaged by daily leukocyte counts and frequent blood pressure readings. Transfusion is essential in the presence of a marked drop. Sex, age, anesthesia, history of catharsis, delay in reaching the surgeon's care still contribute to the mortality. The factors credited for the reduced mortality rate are (1) better postoperative care, (2) use of the McBurney incision and (3) closure of all wounds except those with well walled off abscesses. The delayed or Ochsner treatment has its place in a few cases.

General Abdominal Lymphadenopathy.—Mesenteric adenitis is fairly common and may simulate numerous acute surgical conditions. It may seem to be limited to the lymph nodes with no primary preceding demonstrable lesion. Wilensky points out that general abdominal lymphadenopathies are similar to lymphadenopathies in other areas. In the abdomen many of them are parts of a distinct symptom complex, such as typhoid or dysentery. Others are related to the "rheumatic" group of diseases, and still others to various conditions associated with generalized cutaneous manifestations. A large group seem to be related to a preceding "catarrhal" or "throat" infection, and this seems to have some relation to forms of glandular fever, infectious mononucleosis and abdominal grip. A type of lymphadenopathy which cannot be clinically associated with any demonstrable preceding or accompanying lesion is referred to as nonspecific mesenteric adenitis. The causative agent is not always demonstrable. In only a minority of the cases can bacteria, some strain of streptococcus, be demonstrated in the nodes. No relation with venereal lymphogranuloma can be demonstrated by the Frei test. A causal relation cannot be established between parasites and nonspecific mesenteric adenitis. The port of entry for the causative agent for nonspecific mesenteric adenitis is rarely the appendix. More commonly entrance seems to be related to "catarrhal" or "throat" infections, and infrequently the condition is a manifestation of a hematogenous mechanism or of an agent swallowed from the oropharynx and passed along to the terminal portion of the ileum, from which local absorp-

tion occurs. Most often nonspecific mesenteric adenitis is a local effect of absorption from some local nondemonstrable lesion in the ileal segment. This includes various forms of transient enteritis, surface infections, various gross and microscopic injuries and physical and chemical trauma. Its similarity to cervical adenitis is absolute. In either case local injuries and infections permit the passage of the causative agent to the appropriate lymph nodes. As in many cases abdominal lymphadenopathy is part and parcel of some larger definite clinical entity, treatment must be along the lines for the original disease. In the presence of nonspecific mesenteric adenitis and the absence of suppuration or other complication, abdominal explorations are more or less frequently necessary to establish the true nature of the intra-abdominal condition.

Journal of Pediatrics, St. Louis

17:709-866 (Dec.) 1940

Surgical Closure of Patent Ductus Arteriosus. R. E. Gross, Boston.—p. 716.
Significance of Protein Metabolism in Nephrotic Child. L. E. Farr, Wilmington, Del.—p. 734.
*Chemotherapy of Staphylococcic Infections. E. E. Osgood, with technical assistance of Inez E. Brownlee, Portland, Ore.—p. 740.
Neuromuscular Development of Human Infant as Exemplified in Achievement of Erect Locomotion. Myrtle B. McGraw, New York.—p. 747.
Hydrometrocolpos in Infancy: Congenital Atresia of Vagina with Abnormally Abundant Cervical Secretions. P. J. Mahoney and J. W. Chamberlain, Boston.—p. 772.
*Renal Glycosuria; Hereditary and Clinical Study of One Family. S. G. Babson, Portland, Ore.—p. 781.
Dermatomyositis in Childhood. M. S. Hecht, Baltimore.—p. 791.
Serum Reaction Complicated by Acute Carditis. G. H. Wadsworth and C. H. Brown, Detroit.—p. 801.
Erythroblastosis in Icterus Gravis Neonatorum Successfully Treated with Vitamin K. Evelyn W. Mayman, Modesto, Calif.—p. 806.

Chemotherapy of Staphylococcic Infections.—Osgood subjected 13 patients with serious staphylococcic infection to treatment with neoarsphenamine or sulfathiazole alone, to neoarsphenamine and sulfathiazole or to neoarsphenamine and sulfamethylthiazole. Twelve of the patients recovered. His limited experience leads him to believe that it is important to start therapy at the earliest possible moment, to maintain blood levels continuously, to drain localized accumulations of pus, to introduce sulfathiazole in suspension locally, as suggested by Spink and Hansen, and to continue treatment for at least one week after evidence of infection has disappeared. The optimal concentration of sulfathiazole is from 5 to 10 mg. per hundred cubic centimeters. In some experiments with cultures of living marrow neoarsphenamine was superior to sulfathiazole, in others the reverse was true. The combination of the two drugs was often more effective than either alone, but always more effective than the less effective of the two used. Neither drug led to complete sterility of the cultures in as many cases as did sulfanilamide against the beta hemolytic streptococcus when similarly tested. The larger the inoculation of organisms, the less effective were the drugs. The available data suggest that each drug will have a place in the therapy of staphylococcic infections and that their combination may prove more effective than either alone in the most serious infections.

Renal Glycosuria.—Babson presents data on renal glycosuria found in three generations of the same family. The youngest (4 years of age) member who has the disorder was especially studied. The oldest living member is the mother and grandmother respectively of the other 2 patients. She is now 52 years of age and has had almost constant glycosuria for twenty-one years. Her oldest brother was known to have sugar in his urine. The mother's oldest son, now 32 years of age, has had glycosuria for nine years and his 4 year old son is also affected, whereas his other 2½ year old son has so far sugar-free urine. The affected boy exhibited ketonuria, mild acidosis and a renal threshold for sugar below 50 mg. per hundred cubic centimeters. His diet was restricted in carbohydrates. Diabetes mellitus with a normal renal threshold has developed in the oldest member. A rise in renal thresholds for sugar to within normal limits has been observed in the other 2 cases. No special form of treatment is usually necessary. The diet should not be restricted. On the contrary, it should contain sufficient additional carbohydrate to offset the loss of sugar in the urine. This will prevent ketosis and maintain an adequate glycogen reserve. The renal glycosuria was transmitted directly as a dominant character.

Kansas Medical Society Journal, Topeka

41:497-538 (Dec.) 1940

Preoperative and Postoperative Management of Gallbladder Disease. R. W. McNealy, Chicago.—p. 497.
Therapy in Pneumonia. R. H. Major, Kansas City.—p. 502.
Partial Spontaneous Pneumothorax. H. M. Swaney, Goodland, and G. M. Tice, Kansas City.—p. 507.
Medical Management of Urinary Infection in Pregnancy. O. W. Davidson, Kansas City.—p. 511.

New Orleans Medical and Surgical Journal

93:277-330 (Dec.) 1940

Plea for Wider Employment of Roentgen Rays in Examination of Lungs. B. R. Kirklin, Rochester, Minn.—p. 277.
Warren Stone. J. V. Schlosser, New Orleans.—p. 281.
Effect of High Temperature on Body Functions: Regulation of Body Temperature. H. Laurens, New Orleans.—p. 283.
Id.: Effects of High Environmental Temperature on Human Body. P. H. Jones Jr., New Orleans.—p. 288.
Fulminating Meningococcic Septicemia with Bilateral Suprarenal Hemorrhage: Report of Two Cases. Emma S. Moss and J. R. Schenken, New Orleans.—p. 294.
Mortality of Acute Appendicitis: Continuing Study (4,207 Cases) from the Charity Hospital of Louisiana at New Orleans. F. F. Boyce, New Orleans.—p. 300.
Management of Third Stage of Labor. R. E. Arnell, W. F. Guerriero and R. F. Phillips, New Orleans.—p. 308.

New York State Journal of Medicine, New York

40:1761-1828 (Dec. 15) 1940

Respiratory Depression During Anesthesia Attributable to Carotid Sinus Disturbances: Clinical and Laboratory Study. C. L. Burstein, New York.—p. 1767.
Occipitoposterior Position and Modified Scanzoni Maneuver. R. J. Pieri, Syracuse.—p. 1773.
Acute Anterior Poliomyelitis: Manifestation of Acute Tissue Anoxia. W. F. Duggan, Utica.—p. 1780.

Oklahoma State Medical Assn. Jour., Oklahoma City

33:1-58 (Dec.) 1940

Present Status of Female Hormone Therapy. C. S. McMurray, Nashville, Tenn.—p. 1.
Indications, Results and Reasons for Use of Different Types of Skin Grafts. S. S. Ellis and C. Von Wedel, Oklahoma City.—p. 8.
Thyroid Disease. F. S. Newman, Shattuck.—p. 14.
Horseshoe Kidney. A. R. Sugg, Ada.—p. 18.
Undulant Fever (Brucellosis). F. P. Fry Jr., San Antonio, Texas.—p. 21.

Public Health Reports, Washington, D. C.

55:2251-2302 (Dec. 6) 1940

Studies on Foodstuffs Fumigated with Methyl Bromide. H. C. Dudley, J. W. Miller, P. A. Neal and R. R. Sayers.—p. 2251.

55:2303-2336 (Dec. 13) 1940

Smallpox in the United States: Its Decline and Geographic Distribution. C. C. Dauer.—p. 2303.
Qualifications of Professional Public Health Personnel: I. Plan and Scope of Survey. M. Derryberry and G. Caswell.—p. 2312.
Washing Facilities for Food Handlers on Ships: Report of Survey. G. C. Sherrard.—p. 2319.

55:2337-2368 (Dec. 20) 1940

Recommended Procedure for Mouse Protection Test in Evaluation of Antimeningococcus Serum. Sara E. Branham and Margaret Pittman.—p. 2340.
*Ticks and Relapsing Fever in the United States. G. E. Davis.—p. 2347.
Nursing Visit Transcripts as Training Material. Margaret G. Arnstein and M. Derryberry.—p. 2351.

Ticks and Relapsing Fever in the United States.—Davis states that the first cases of relapsing fever of proved endemic origin were reported from Bear Creek Canyon, Jefferson County, Colo. Since then reports indicative of new endemic areas have been published from ten other states: Arizona, Kansas, Washington, Utah, Nevada, Idaho, New Mexico, Oklahoma, Texas and California and possibly Montana. Ticks have been reported from Florida, Minnesota, New York, Wisconsin and Wyoming. One or more of the six species of Ornithodoros that have been reported from each of the seventeen states are Ornithodoros turicata, hermsi, parkeri, talaje, coriaceus and coprophilus. The presence of talaje in Northern states is without doubt due to importation in shipments of materials. However, infestation of ten Northern houses has been reported.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

24:581-628 (Dec.) 1940

Pilot Fitness, a Safety Factor in Aviation. C. E. Ferree and G. Rand.—p. 581.
Rare Ocular Developmental Anomalies in Association with Congenital and Acquired Blindness: Clinical "Proof" of Vitreous Development. J. H. Young.—p. 597.
Gaucher's Disease with Biopsy of Typical Pinguecular: Case. T. East and L. H. Savin.—p. 611.
Cerebral Fat Embolism with Recovery: Involvement of Central Retinal Artery. J. J. Evans.—p. 614.

British Journal of Radiology, London

13:393-430 (Dec.) 1940

Radium Treatment of Cancer of Penis. M. Lederman.—p. 393.
Further Lung Dusting Experiments. A. E. Barclay, K. J. Franklin and M. M. L. Prichard.—p. 410.
*Cases of Spondylolisthesis of Unusual Interest. J. Blewett.—p. 416.
Soft Tissue Radiography. E. P. Allen and H. W. Calder.—p. 422.
Tonus. F. Roberts.—p. 428.

Spondylolisthesis.—Blewett presents 2 cases of spondylolisthesis and a discussion of its pathologic anatomy. He believes that examples of the condition in a minor form still occur which have not been generally appreciated. The 2 case histories are of interest because they have some bearing on the production of symptoms and because their type has not been described heretofore. When the recumbent posture is assumed during examination the cases are in no way different from many others. Their interest lies in the fact that the deformity could be demonstrated only in the erect posture and would have passed unnoticed if such examination had been omitted. The need for investigation in this position before an olisthesis is excluded is therefore indicated. The displacement was present only while the patients were erect and slipped back when they resumed the recumbent position. They experienced pain only when they were erect and they were comfortable only when recumbent. The pain of the first patient was typically of a referred sciatic type, and other signs of neural involvement were lacking. The second complained of sciatic pain and a lumbar ache amounting almost to a feeling of dissolution. Lateral roentgenograms in the erect position demonstrated a forward displacement and it is seen that to some extent collapse of the intervertebral disk accounts for the deformity. This mechanism does not operate alone, as a small degree of forward displacement is present. Whatever the possible explanation of the pain may be, the cases suggest that the actual movement of one vertebra on another can be the direct source of a severe form of sciatica.

British Medical Journal, London

2:731-772 (Nov. 30) 1940

Surgical Experiences with the British Expeditionary Force. C. M. Page.—p. 731.
*Hemolytic Streptococci in Cardiac Lesions of Acute Rheumatism. S. Thomson and J. Innes.—p. 733.
*Hyperventilation and Effort Syndrome. E. Guttmann and M. Jones.—p. 736.
Observations on Effort Syndrome. J. D. Spillane.—p. 739.
*Sulfonamide Therapy in Lupus Erythematosus. F. Glyn-Hughes and A. M. Spence.—p. 741.

Hemolytic Streptococci in Cardiac Lesions in Rheumatism.—Thomson and Innes present data on a study of the cardiac valves in 10 cases of acute rheumatism in which necropsy was performed as soon as possible after death. In some of the cases as much as twenty hours had elapsed. Hemolytic streptococci were recovered from the hearts of 5. Ten similar control necropsies were carried out, but from none was a hemolytic streptococcus isolated; however from a heart valve in 3 cases an α type streptococcus was obtained which was not isolated from the blood. Successful cultures were obtained from eleven of twenty-six valves showing acute rheumatic lesions. The condition of many rheumatic patients examined after death is such that negative results are likely to be obtained, as many will have survived the early acute phase. Of the technical difficulties encountered the most important is the presence of other bacteria, especially coliform bacilli, which gain access to the blood either soon after death or in the agonal stage. These bacteria rapidly overgrow the hemolytic streptococcus. Therefore the isolation of the causative agent cannot be expected in every case, and the authors are not surprised that they were unable to isolate the hemolytic streptococcus from the heart in more than 50 per cent of the cases. They suggest that hemolytic streptococci are the cause of rheumatic fever, being responsible for the valvulitis, and that some other process leads to pathologic valvular changes which allow organisms of various types, including hemolytic streptococci, to lodge there. Clinical and bacteriologic evidence that infection of the upper respiratory tract by hemolytic streptococci precedes and accompanies the syndrome of rheumatic fever favors the first hypothesis. The fact that hemolytic streptococci can be isolated from the damaged heart valves of patients dying from rheumatic fever but not from the undamaged valves or from the healthy valves in control cases supports the hypothesis. The absence of hemolytic streptococci in the blood and their presence in the damaged valve appears to enhance the view. The second hypothesis is favored by the fact that the pathologic reactions in the valves and myocardium are not those generally accepted as typical of streptococcic infections. This difficulty has been overcome by the suggestion that the patient suffering from rheumatic fever reacts in an abnormal way to streptococcic infection. Another argument favoring the second hypothesis is that other types of streptococci were isolated from heart valves and tissues of patients with rheumatic fever and controls when the blood yielded no such organism; a streptococcus was isolated from six damaged valves and from two undamaged valves, a γ streptococcus from seven damaged valves, an α streptococcus from three valves of the control series, type IV pneumococcus from a damaged valve and an α streptococcus from the spleen of 1 of the patients of the rheumatic series. However, the hemolytic streptococcus was isolated only from damaged valves and therefore the authors are inclined to support the view that the cardiac lesions are due to infection with hemolytic streptococci.

Hyperventilation and Effort Syndrome.—Guttmann and Jones observed 52 cases of effort syndrome with no demonstrable organic disease. For practical purposes the cases are divided into psychogenic, postinfective and constitutional groups. The authors use the term "effort syndrome" to describe cases which show an excessive physiologic response (breathlessness, fatigue, precordial pain and palpitation) to some forms of exercise or excitement. As soon as the routine examination was carried out on admission the patients were given a hyperventilation test, only the total ventilation being measured as a check of the patient's cooperation. The ventilation in 34 of the 52 cases was measured and the ventilation of 9 was less than 10 liters. In the remaining cases the reading varied between 10 and 18 liters. The patients were instructed to keep on overbreathing for ten minutes, and 18 did so; 5 breathed more than nine minutes and the others gave up after from two to eight minutes, as they thought the symptoms too disagreeable. The authors were satisfied that the purpose of the test—the reproduction of symptoms—was fulfilled when the patients gave up, or that they had hyperventilated sufficiently to justify the conclusion that they were not abnormally sensitive to overbreathing. The patients were asked to describe what they felt. The symptoms described were those commonly associated with tetany—e. g., paresthesias and disturbances of consciousness—rather than those characteristic of effort syndrome. In view of their observations the authors state that they cannot support the contention that hyperventilation has an important place in the etiology of effort syndrome. Only 4 patients complained of more or less characteristic thoracic pain, which is a symptom complained of by 66 per cent of patients with effort syndrome. Palpitation did not occur. It would appear that hyperventilation can be of importance only in a proportion of cases of effort syndrome. The few patients who showed no symptoms as a result of the test overbreathed to an extent far beyond the effort which otherwise produced their symptoms. All the others ventilated sufficiently to reproduce their symptoms or to show tetanic symptoms. Since the latter patients showed tetanic symptoms

for the first time when they hyperventilated, it is reasonable to assume that their original symptoms were not related to overbreathing. There appear to be two ways in which hyperventilation may operate in producing the syndrome; anxiety plus exertion may bring about hyperventilation and subsequently tetanic and kindred symptoms and habitual overventilation. These two possibilities are not mutually exclusive, but it is certain that hyperventilation is an etiologic factor in only some cases.

Sulfonamide Therapy in Lupus Erythematosus.—In view of the probable streptococcic origin of lupus erythematosus, Glyn-Hughes and Spence tried the sulfonamides for its treatment. Sulfapyridine was used for most of the 12 patients treated. Every patient experienced a definite response to the therapy, a point which strongly supports the theory of a streptococcic origin of the disease. Six patients are completely healed and remain so. Even patients who were not benefited, some of them chronic sufferers, were loath to abandon the treatment owing to the hopes to which the initial improvement had given rise. The existence of some latent and resistant focus of infection is probably the cause for the failures. This is illustrated by a patient who relapsed twice, but after a previously overlooked cervical erosion was eradicated she was completely cured. The successes were among those patients who had not suffered from the disease for more than a year. Roughly 25 Gm. of the sulfonamides administered over a period of about four weeks were successful in clearing up what is regarded an intractable disease. The effect of the drug appears specific and suggests that the prognosis in early cases may be favorable.

Edinburgh Medical Journal

67:717-788 (Nov.) 1940

The Work of a Regimental Medical Officer. D. S. Middleton.—p. 717.
Treatment of War Wounds in France: May-June 1940. J. S. Jeffrey. —p. 727.
Iodine and Exophthalmic Goiter. D. M. Lyon.—p. 743.

67:789-872 (Dec.) 1940

Ergot and Its Alkaloids. A. C. White.—p. 789.
Levulose Tolerance Test in Intolerance to Antisyphilitic Therapy. G. O. Horne.—p. 801.
Intra-Abdominal Diagnosis. E. K. Mackenzie.—p. 805.
Hyperemesis Gravidarum. E. C. Fahmy.—p. 822.
Care of Children in Wartime and After. L. Thatcher.—p. 836.

Journal of Neurology and Psychiatry, London

3:293-362 (Oct.) 1940

Effect of Raised Intracranial Pressure on Cerebral Blood Flow. F. C. Courtice.—p. 293.
Metabolism of the Brain. F. C. Courtice.—p. 306.
Cerebellar Atrophy Associated with Etat Marbré of Basal Ganglions. R. M. Norman.—p. 311.
Neurohistologic Basis for Sensation of Pain Provoked from Deep Fascia, Tendon and Periosteum. G. Weddell and J. A. Harpman.—p. 319.
Juvenile Paresis in One Twin. R. Ironside.—p. 329.
Electroencephalogram in Electrically Induced Convulsions in Rabbits. H. Löwenbach and R. S. Lyman.—p. 336.

Journal of Pathology and Bacteriology, Edinburgh

51:317-472 (Nov.) 1940

*Corynebacterium Diphtheriae and Composition of Its Toxin in Relation to Severity of Diphtheria. R. A. O. O'Meara.—p. 317.
Differential Leukocyte Count. R. G. S. MacGregor, W. Richards and G. L. Loh.—p. 337.
Hypertension Following Thrombosis of Renal Veins. C. B. Perry and A. L. Taylor.—p. 369.
Aneurysm of Great Vein of Galen Causing Internal Hydrocephalus: Report of Two Cases. Dorothy S. Russell and S. Nevin.—p. 375.
Spontaneous Uterine and Mammary Tumors in Rabbit. H. Burrows.—p. 385.
Further Observations on Living Vaccinia Virus. K. B. Eisenberg-Merling.—p. 391.
Capsulation of Hemolytic Streptococci in Relation to Colony Formation. J. E. Morison.—p. 401.
Excretion of Hemoglobin, with Special Reference to "Transfusion" Kidney. S. De Navasquez.—p. 413.
Antigenic Structure of Organisms of Genus Listerella. J. S. Paterson. —p. 427.
Experimental Infection of Chick Embryo with Organisms of Genus Listerella. J. S. Paterson.—p. 437.

Composition of Diphtheria Toxin and the Severity of Diphtheria.—According to O'Meara, the hypertoxic type of diphtheria, that is with toxemia caused by the grave type of organism, as it occurs in the human being may be reproduced in the guinea pig by a combination of Park-Williams number 8 toxin and bacteria-free preparations of grave strains. However, either alone failed to reproduce it. It is deduced that diphtheria toxin has two components provisionally called substance A and substance B. The Park-Williams toxin appears to contain a high proportion of substance A, and the toxin produced by gravis strains was found to contain a high proportion of substance B, in relation to the other substance. Ehrlich's phenomenon, avidity, the Danysz phenomenon and the failure of toxin-antitoxin titrations to follow a law of multiple proportions can all be readily explained on the hypothesis that exotoxins are composed of two antigenically distinct substances giving rise to two distinct antibodies which together endow an immune serum with its antitoxic properties. Immunity to diphtheria would be not so much a question of the amount of antitoxin in the body as of its quality, in part explaining the occasional failure of artificial immunization. Organisms which produce toxin containing excess of substance B will be able to cause diphtheria in those who are apparently immune as judged by the presence of antitoxin in their blood. This result may not be achieved in the guinea pig owing to its high natural resistance to substance B, but it is not infrequent in the human being. Belief in the efficacy of the Schick test as a means of detecting immunity to diphtheria has recently been severely shaken. It is not difficult to imagine persons with a sufficient quantity of antibody to one of the constituents of diphtheria toxin (presumably substance B) in their blood to render them immune who would nonetheless be frankly Schick-positive, and others with antibody to the other constituent who would be Schick-negative but would not possess sufficient immunity to substance B to protect them from a natural infection.

Lancet, London

2:673-706 (Nov. 30) 1940

Traumatic Hemothorax. F. R. Edwards and H. M. Davies.—p. 673.
Anesthesia in Chest Injuries. J. Halton.—p. 675.
Accidental Acute Carbon Monoxide Poisoning. J. McMichael and H. D. Roskin.—p. 677.
Leukocyte Count in Rubella. M. Hynes.—p. 679.
Modified Flow Meters for Anesthetic Gases. E. A. Pask.—p. 680.
Chemotherapeutic Investigations on Virus of Lymphogranuloma Venereum. G. M. Findlay.—p. 682.
Suction for Carbuncles and Boils. W. I. de C. Wheeler.—p. 683.
Cryptogenic Pneumococcic Septicemia: Failure of Sulfapyridine. R. P. A. Rigg and R. T. Cooke.—p. 683.
Menorrhagia Due to Essential Thrombocytopenia. L. Snaith.—p. 684.

Medical Journal of Australia, Sydney

2:521-554 (Nov. 23) 1940

Clinical Survey of Nine Cases of Encephalomyelitis in Association with Measles. M. E. Chinner.—p. 526.
Effect of Glucose on Competitors in Sprint Swimming Races. F. S. Cotton.—p. 530.
Treatment of Fracture or Dislocation of Cervical Vertebrae. R. D. Wright and J. Wunderly.—p. 532.
Experiences in High Ligation and Injection Treatment of Varicose Veins. N. Wyndham.—p. 534.

Practitioner, London

145:373-436 (Dec.) 1940

Modern Treatment of Anemia. W. E. Hume.—p. 373.
Treatment of Hemorrhagic Diseases. J. F. Wilkinson.—p. 382.
Blood Transfusion. P. N. Panton.—p. 389.
Technic of Simple Blood Examinations and Methods for Collection of Blood. C. J. C. Britton.—p. 395.
Explosion Injuries of Ear. D. H. Craig.—p. 400.
Abdominal Injuries and Wounds. V. Z. Cope.—p. 405.
Treatment of Emphysema and Its Complications. F. G. Chandler.—p. 411.
Some Uses of Gentian Violet Application. E. W. P. Thomas.—p. 419.
Modern Therapeutics: XVIII. Counterirritation and Counterirritants. E. J. Wayne.—p. 422.

South African Medical Journal, Cape Town

14:411-430 (Nov. 9) 1940

Irish Recollections of Fifty Years Ago—Mainly Medical. H. C. Martin. —p. 413.
Hypothalamus. A. L. McGregor.—p. 415.
Therapeutic Methods in Osteomyelitis and Other Septic Wounds. H. O. Mönnig.—p. 421.
South African Natives and Vitamin Deficiency. F. G. Cawston.—p. 423.

Presse Médicale, Paris

48:913-928 (Nov. 19) 1940

*Congenital Gas Cysts of Lung and Emphysema Due to Bronchial Obstruction in Children. R. Debré, M. Lamy and J. Marie.—p. 913.
Bone Puzzle in Syndactylism of Middle and Ring Finger: Case. A. Mouchet.—p. 917.
Observations of Early Microscopic Modifications Secondary to Biliary Derivation. J. Verne and J.-M. Verne.—p. 918.
Cure of Pus Effusion in Inefficacious Pneumothorax and Partial Thoracoplasty. J. Rolland and N. G. Tsoutis.—p. 922.
Myometrectony: New Technic for Treatment of Uterine Myoma. C. R. Cirio.—p. 925.

Congenital Pulmonary Gas Cysts and Obstructive Emphysema in Children.—Two criteria are stressed by Debré and his associates for the differential diagnosis of congenital lung cysts and obstructive emphysema in children. The one concerns the evolution of the disease, the other the actual discovery of the cause of bronchial obstruction. The observation of a gaseous pocket in an area previously observed to be normal indicates obstructive emphysema. The most significant evidence consists in the disappearance of structural outline in the film. Where vesicular emphysema is suspected, stratigraphic verification needs to be made. However, the argument from disappearance may not always be so conclusive because the exact conditions of the disease and the delay involved, for both interlobular and vesicular emphysema, can be fixed only with difficulty. On the other hand, atelectasis (antecedent, associated or subsequent) is evidence of total and valvular obstruction and indicates an acquired lesion. The determination of a foreign body, a tumor growth or an acute pulmonary disorder obviously clinches the diagnosis of obstructive emphysema. Clinical observations, the roentgen rays, the use of a radiopaque medium and bronchoscopic examinations are cooperatively valid aids. Anatomic diagnosis presents similar diagnostic difficulties. In some cases the presence of cartilage, smooth fibers or stratified, ciliated epithelium reveals the congenital character of the lesion. The anatomic diagnostic difficulties may be further enhanced by the presence of vesicles of a secondary emphysema in congenital cysts. In many cases diagnosis may be long delayed because no roentgenograms were made before pathologic signs manifested themselves, because of the impossibility of proving a cause of bronchial obstruction and because of the persistence of the image in the roentgenogram.

Monatsschrift für Geburtshilfe und Gynäkologie, Basel

111:121-248 (Oct.) 1940. Partial Index

Investigations on Body Temperature of Women in Correlation to Phases of Genital Cycle. Ursula Vollmann.—p. 121.
Follicular Persistence, a Constitutional Malady with (Incomplete?) Dominant Inheritance: Preliminary Report. J. Lövset.—p. 154.
*Cicatricial Endometrioses. H. H. Wespi and M. Kletzhändler.—p. 169.
Treatment of Cancer of Vulva. E. Held.—p. 195.

Cicatricial Endometrioses.—According to Wespi and Kletzhändler, 73 women with endometriosis in a laparotomy scar had to undergo operation for this condition at one Zurich clinic in the course of sixteen years. The number is enormous when it is considered that world literature reports only 390 similar cases. In 5 of the 73, cesarean section had preceded the development of the cicatricial endometriosis and in the other 68 cases it followed abdominal interruption of pregnancy. The interval between the causal operation and the first pains resulting from endometriosis was on the average one and six-tenths years. In most of the cases, symptoms developed in the course of the first two years after the operation but rarely immediately after. The authors regard implantation of parts of endometrium into the laparotomy wound as the only possible explanation for the high incidence of cicatricial endometriosis as well as for its localization in the angles of the wound. The thought that implantation of parts of endometrium during an operation might be the cause of cicatricial endometriosis has been expressed by other observers. Another proof of surgical implantation is furnished by the fact that cicatricial endometriosis can be prevented by a surgical technic which carefully avoids transplantation of uterine mucosa into the laparotomy wound. The authors describe such a technic which has reduced the incidence of cicatricial endometriosis to about one fourth.

Gann, Tokyo

34:77-214 (June) 1940. Partial Index

*Renal Sarcoma in a Seven Month Fetus. K. Muto.—p. 102.
*The Changes in the Liver of the Rat Caused by 4-Dimethylaminobenzene-1-Azo-1-Naphthalene, and Related Compounds. R. Kinosita.—p. 165.

Renal Sarcoma in a Seven Month Fetus.—A case of congenital leiomyoma arising in the right kidney in a seven month fetus delivered by artificial induction of labor in a 23 year old woman is reported by Muto. Except for distention of the abdomen, which was moderately pronounced, the external appearance of the fetus was normal, the body length being 34 cm. and the weight 1,010 Gm. When the abdominal cavity was opened, a tumor about the size of a hen's egg originating from the right kidney and covered with the peritoneal membrane was noted. Microscopic examination revealed that the tumor was composed of elongated or spindle-shaped cells scant in cytoplasm; the nuclear chromatin was moderate in amount and presented a uniformly granular arrangement, with only occasionally visible nucleoli. Mitotic figures were frequent. Although some of the cells contained occasional vacuoles, no excess glycogen was demonstrated (formaldehyde fixation). There was a moderate amount of connective tissue fibers between the tumor cells. This type of intra-uterine tumor is relatively rare, since the literature reveals only two similar cases—one described by Kästner (1921), also occurring in a seven month fetus, and another in a newborn infant, as reported by Lubarsch (1925).

Changes in Rat Liver Due to 4-Dimethylaminobenzene and Related Compounds.—Since the discovery by Kinosita of the carcinogenic effect of 4-dimethylaminoazobenzene on the liver of the rat, whether fed by mouth or injected subcutaneously, further investigations have been carried out as to the possibilities of production of either cancerous or precancerous changes in this organ by other related compounds. The object of these researches was primarily to ascertain the radical essential to the carcinogenic properties of these organic compounds. The results of observations are summarized in this report. 1. Hydro-azo compound. 4-Dimethylaminoazobenzene in the animal organism can be reduced into 4-dimethylaminohydroazobenzene, which in turn will be decomposed into dimethyl-p-phenyldiamine and aniline. The latter products of reduction have already been shown to be noncarcinogenic to the rat. The intermediary product, the hydroazo compound prepared synthetically, was given to rats in daily doses of 4 mg. dissolved in olive oil and a little chloroform, for two hundred days with entirely negative results. 2. Sulfodimethylamino compound. A synthetic preparation of 4-sulfodimethylaminoazobenzene failed to produce any significant changes in the liver of the rat. 3. Naphthalene compound. 2-Methylbenzene-1-azo-1 : 2-oxynaphthalene likewise was found ineffective in carcinogenesis, but 4-dimethylaminobenzene-1-azo-1-naphthalene was capable of inducing an atypical bile duct adenoma with considerable fibrous proliferation. With 4-dimethylbenzene-1-2-naphthalene, however, the resulting changes consisted mostly of degeneration of the liver cells and some adenomatous hyperplasia in the gastric glands, with evidence of invasion into the muscularis. 4. Aldehyde and nitroso compounds. A one hundred and eighty day feeding experiment was undertaken, using p-dimethylaminobenzaldehyde, which gave evidence of producing cirrhotic changes in the liver; but in no case were carcinomatous changes observed. Likewise, p-nitrosodimethylaniline led only to degencrative changes in the liver. 2 : 4-dinitrophenol, fed in daily doses of 5 mg. per kilogram of body weight, produced loss in weight and death in a few weeks. The pituitary glands of these animals showed a considerable decrease in eosinophil cells; the thyroid glands became atrophic, many nuclei of the follicular epithelium were pyknotic, and the colloid either stained weakly or partially disappeared. The animals which survived showed similar changes in the thyroids, but the pituitary eosinophils were increased. The adipose tissue became abundant. No significant changes were noted in the liver. 5. Nonsaponifiable liver fraction. Suggested by the experiments of Schabad, a nonsaponifiable liver fraction was prepared from the organ of a patient who died of carcinoma of the stomach. In one case, daily subcutaneous injections in mice resulted in the development of spindle-shaped sarcoma at the site of injection.

THE STUDENT SECTION

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Devoted to the Educational Interests and Welfare of Medical Students, Interns and Residents in Hospitals

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The Health of College Students and National Defense

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MINNEAPOLIS

At the time of our last annual meeting one year ago few if any of us had the vision to see the far-reaching effects which the European war would have on our American way of life. During these past twelve months we have witnessed in our country the passage of the first selective service law in peace time. The young men in the country have had their draft numbers assigned to them, and one group has already been called to military service.

The first hurdle to be passed by these young men called for army service is the physical examination. In 1917 and 1918 the United States Army rejected as physically unfit approximately 30 per cent of the young men who were drafted for military service. The question which is being asked today is: Are the young men who will be drafted now any healthier than those were twenty-two years ago? The answer to this question is one which will be of particular interest to all who have been engaged in student health work and other fields of health education during the past twenty-five years.

The high percentage of young men found unfit for military service in 1917 and 1918 gave great impetus to preventive medical work in this country. The development of college health work was greatly stimulated by these findings. Since the majority of physical defects found on the men excluded from army service were preventable in nature, it seemed obvious that, with some provision for the early detection of such physical defects and for their correction, it would be possible to prevent such a large proportion of our young people from acquiring these physical handicaps.

However uneasy we may be about the world situation and however earnestly we may wish to keep the peace in our country, the physical examination of several million young men offers an unprecedented opportunity to gage the progress which has been made in health conservation. Incomplete and scattered data for volunteers in the present national crisis indicate that the percentage rejected for physical defects is approximately the same as in 1917 and 1918. The Metropolitan Life Insurance Company thinks, however, that far fewer serious impairments will be found among the young men of 1940 than among those of 1917. Whether or not this is true will be determined only when the results of the physical examinations of large numbers of the drafted men are made available. The progress which has been made in the control of tuberculosis, syphilis, rheumatic heart disease and certain of the communicable diseases which leave disabling sequelae should be reflected in the physical fitness of the present generation of young people.

Although the college group does not represent a true cross section of the young men of draft age, still a college population in a state university can no longer be said to be highly selective. Unemployment among youth today and scholarships and federal aid have put into the college many youths who formerly had no opportunities for higher education. It seemed of interest, therefore, to take a sampling of young men entering a state university and to compare the results on physical examination with the physical standards of the selective service act.

According to the physical standards under the selective service act, the examinees will be classified into three categories:

Class 1-A: Those physically qualified for general active military service.

Class 1-B: Those who are physically unfit for general active military service but fit for special and limited military service.

Class 4: Those physically unfit for any military service.

At the present time only men assigned to class 1-A will be inducted into the army. In brief the regulations say:

The registrant must be able to see well; have comparatively good hearing; have a heart able to withstand

Presidential address, read before the twenty-first annual meeting of the American Student Health Association, Ann Arbor, Mich., Dec. 27, 1940.

the stress of physical exertion; be intelligent enough to understand and execute military maneuvers, obey commands, and protect himself; and be able to transport himself by walking as the exigencies of military life may demand. Examining physicians will accordingly so construe these standards that the objective stated above may be realized.

An unselected sample of one thousand physical examination records of young men entering the Univerisity of Minnesota in the fall of 1939-1940 was studied. Of the group of one thousand, ninety-two, or 9.2 per cent, would be assigned to class 4, those physically unfit for any military service, while ninety-four, or 9.4 per cent, would be assigned to class 1-B, those who are physically unfit for general active military service but fit for special and limited military service. Thus a total of 18.6 per cent of these university students would be rejected for active military service at the present time. The reasons for the disabilities in this group bear out the prediction of the Metropolitan Life Insurance Company that the majority rejected are due to minor physical disabilities. Of the ninety-two students whose physical examinations revealed them to be unfit for any military service, fifty were so classed because of underweight according to the selective service standards. It is possible that a number of these young men would be accepted for military service, as the examining boards have been given a good deal of discretion in matters of height and weight. If, in the opinion of the board, proper food and training will make a man capable of giving service, he may be inducted into the service. It is probable also that this number rejected for underweight is higher than would actually occur in university men of draft age, as the majority of the group were under 21 years of age. Diehl's studies showed that college men increased in weight with age and the percentage of underweight students decreased as the age of the students rose.

The next most common physical defect found in this group was a rapid heart rate. According to the physical standards for selective service, a heart rate of 100 or over per minute, when this is proved to be persistent in the recumbent posture and on observation and reexamination over a sufficient period of time, disqualifies a man for any military service. In the thousand university students examined there were twenty-eight who had pulse rates of 100 or over on repeated examinations. In none of these could any organic cause for the tachycardia be found. It is of interest also that in this sampling there were no students with organic disease of the heart.

Three of the thousand students had visual defects of such severity that they would be excluded from military service. There were two with active pulmonary tuberculosis and two with diabetes, both of which are causes for rejection. One student with duodenal ulcer and one with syphilis are also included in this group. There were only five of the thousand with flat feet which were disabling and which would therefore put them in the group unfit for any military service. One member of the group was disqualified for any military service because of a severe scoliosis.

In a recent issue of THE JOURNAL there was a report [1] on the physical examinations of a group of volunteers in New York. Of those who were rejected for military service, 23 per cent were rejected because of dental defects. It is significant that in this group of entering university students there was not one whose teeth were in such condition that he would be put in class 4, and only one student who would be classified as 1-B. The mouths of all the rest were in such condition that they would have been classified as 1-A.

Those students whose physical examinations on entrance to the university were such that, according to the physical standards for selective service, they would fall into class 1-B, as fit for special and limited military service, numbered ninety-four of the thousand. The largest percentage of this group was so classified because of nose and throat defects. There were forty-four who were classed as 1-B, according to the selective service standard, because of nose and throat defects. Seventeen of these had a deviated septum with obstruction to breathing, fifteen had severe hay fever and twelve a chronic sinusitis. Next in importance were defects of hearing. Fourteen of the group had a hearing loss of 50 or more decibels in both ears when tested with the audiometer. The selective service standards do not require the use of the audiometer to determine hearing loss, but rather the spoken voice at 20 feet. Since there have been no standards by which one might translate audiometer readings to compare with the method of testing with the spoken voice, the hearing loss of 50 decibels in both ears has been arbitrarily selected. Using this, however, there were fourteen with a hearing loss sufficient to classify them for limited service.

There were eleven who were classified for limited service because of asthma and eight because of hernia. Twelve of the group were put into class 1-B because of stuttering. There was only one student who was classed for limited service because of a visual defect. It is obvious that in this group of university students the majority who would be excluded or limited, as far as military service is concerned, would be so classified because of relatively minor physical defects.

1. Leone, G. E.: Causes of Rejection for Entrance Into the Regular Army Due to Physical Defects, J.A.M.A. 115:1283 (Oct. 12) 1940.

Whether these university students are in better physical condition than a true sampling of the general population is not known. The observations in this comparatively small group would indicate that such is the case. While students in a large state university such as the University of Minnesota probably represent a fairly good cross section of the economic and social groups in the area, there is some selection on the basis of intelligence. One would expect this factor of intelligence to have an effect on the health habits and health practices of this group of college students. Not until the results of the examinations of thousands of young men from all sections of the country and from all social, economic, occupational and intellectual levels are available can many questions which come to mind be answered.

Never before have those working in the field of health education and preventive medicine had such an opportunity as the selective service act offers to evaluate the results of public health measures of the past twenty years. Some disappointments may be in store for us, but such scanty preliminary evidence as I have presented indicates that some progress has been made. Likewise such information presents a challenge to all engaged in health work from the elementary school through the college. It seems reasonable to assume that the results of the physical examinations of young men drafted in 1940 will, as in 1918, cause a renewed interest in preventive medicine and health education and give us valuable information which will guide in the development of the public health program of the future.

Digests and Reviews

POOR BUT PERTINENT

Editorial published in the Journal of the Oklahoma State Medical Association, January 1941.

In this hazardous period of social, economic and political instability, which is threatening the accepted foundations of life, including the time-honored principles of medical practice, it is well for us to continue voluntary care of the poor. This can be accomplished either through individual or organized effort. Accumulated experience indicates that individual care is not wholly without material reward.

Dr. Daniel Drake, one of the great in the history of medicine, once said to Dr. Lunsford P. Yandall of Louisville, Kentucky: "I have never seen a great and permanent practice, the foundations of which were not laid in the hearts of the poor. Therefore cultivate the poor. If you need another, though sordid reason, the poor of today are the rich of tomorrow in this country. The poor will be the most grateful of all your patients. Lend a willing ear to all their calls."

In Abraham Flexner's autobiography, *I Remember*, there is a statement suggesting that Dr. Yandall may have passed this advice on to his illustrious sons. Dr. Flexner says that when he was a boy one of them treated him for a severe and obscure illness and that "his remuneration was a weekly loaf of mother's bread, which I regularly used to carry to his home."

Early in his career Benjamin Rush said the poor were his best patients because "God is their paymaster." At the age of 68, on his deathbed, he said to his son: "Be indulgent to the poor." Though a century has passed, we find the following in the Life of Chevalier Jackson. Dr. W. W. Keen is quoted as having said "Chevalier Jackson's skill was acquired by a lifetime of work with the poor." No man could wish for a greater reward than Dr. Jackson's skill and the realization of what it has meant to humanity.

Returning to the sordid side, it may be pointed out that in the eighteenth century Fothergill, whose annual income was $125,000, said "I climbed into the pockets of the rich over the backs of the poor."

The author recalls that one of his professors, a brilliant teacher and busy practitioner, attributed his high professional rating among the well-to-do on Fourth Street to the influence of his washerwomen and nursemaid patients in poverty row on the water front.

In his remarkable work on surgery, Henry of Moudeville made the following statement: "If you have operated conscientiously on the rich for a proper fee, and on the poor for charity, you need not play the monk, nor make pilgrimages for your soul."

Let us pray for the preservation of personal freedom in the choice of a physician. It is this that keeps every good doctor's door open to the poor. The doctor needs the chastening influence of their presence, and they need the sense of security and independence which a free choice helps to preserve. In time of trouble there is something intensely vital about this intimate relationship. No doubt this is due to the fact that the true physician is genuinely interested in his patient and does what he can to mend broken bodies without regard to religious faith, moral, social or financial position.

THE SCIENCE AND THE ART OF MEDICAL PRACTICE

A talk before the cardiac clinics by Dr. Frederick A. Willius, Rochester, Minn. Slightly condensed from Proceedings of the Staff Meetings of the Mayo Clinic, Oct. 9, 1940.

The practice of medicine contains two important ingredients, the science and the art of medicine, which must be so subtly blended that a mixture is created that does not predominate in one constituent at the expense of the other.

THE SCIENTIFIC ASPECT

The physician begins his long period of training chiefly under the influence of the science of medicine, including the acquisition of the basic sciences such as anatomy, physiology, chemistry; later the clinical branches of medicine are undertaken, with the result that he is literally stuffed with facts which require time for their proper digestion. Throughout this period little time remains for teaching that equally important ingredient the art of medicine. Frequently no attempt is made to teach this important subject, the assumption prevailing that this finesse will be acquired with experience. This omission is further fostered by the fact that, in a great measure, undergraduate teaching is carried out in charity hospitals and dispensaries where the sick person frequently is a case rather than a patient. The result may be the brilliantly trained scientist who has not acquired the methods to utilize his knowledge to the best advantage, or the scientist with such an encyclopedic knowledge of uncorrelated facts that he is perpetually bewildered by the enormous extent of his knowledge.

THE ART OF MEDICINE

One would not decry the importance of the science of medicine, for obviously this forms the basis of the sage physician, and without a fundamental knowledge of the many branches of medical science he would not be a safe physician. However, the physician must know how to apply his scientific knowledge if it is to be an asset to him and it is at this point that we envision the portals of the art of medicine. The art of medicine comprises many considerations. The physician inevitably acquires a manner which on the one hand may inspire confidence, be pleasing to the patient and at all times exhibit courteousness and sincerity of purpose or, on the other hand, by virtue of gruffness, obvious insincerity or impatience may create an unremedial impasse between the patient and himself.

The average patient has but little difficulty in appraising the sincerity of purpose of the physician. The physician must be dignified but it is no longer necessary to assume a painful artificial guise. There was a stage in medical history when the silk hat and the bewhiskered face of so-called maturity were believed to be requisites of the well trained physician, but today no such parade enables us to hide our deficiencies.

THE INDIVIDUAL PATIENT

Every patient is a problem unto himself not only from the scientific aspects of diagnosis and treatment but likewise in the application of the art of management. Individuals differ from one another when they are well and these differences become greatly amplified when they are ill. Probably one of the most difficult feats for the young medico to master, and some never learn this important lesson, is the knowledge that the psychologic reactions of the sick person are apt to be disturbed; notably is this the case with individuals nervously afflicted. Thus, apparent stubbornness and what may appear to be unreasonable attitudes must not be countered with a stubborn, adamant attitude until cautious tact and diplomacy have been exhausted.

NATURE OF "INTUITION"

The physician must train himself to be a practical psychologist so that he may quickly fathom the unspoken reactions of the patient, which are frequently more outspoken than uttered words but which may entirely escape the unwary. It is important that this appraisal be instantly accomplished, for the ensuing procedure may be dictated by a fleeting impression. The ability to delve into the psychic reactions of the patient and often to anticipate unexpressed reactions is frequently referred to as intuition. It comprises no mystic powers but only the alert interpretation of subtle expressions, both uttered and unuttered. As the physician is usually the interrogator, he should always attempt to command this advantage. The approach to each patient necessitates a variation in technic and it is frequently important to engage the individual in general conversation before bluntly plunging into the presenting problem. Many times the alert physician obtains invaluable clues regarding the patient before a word of the individual's physical complaint has been stated.

The physician's knowledge of human nature must be profound. He must recognize the intellectual, critical individual; the emotional, erratic type; the stolid, reluctant personality; the mentally inadequate as well as the ignorant. These are but a sampling of the human problems that constantly confront the physician, who must be prepared to meet these innumerable problems with correspondingly innumerable variations in method.

APPLICATION OF KNOWLEDGE

The scientific physician who does not interest himself in or acquire the subtleties of the art invariably fails in the full availment of his skill and talents to the patient. The purely scientific approach to a medical problem may suffice in many instances but it is just as likely to be thwarted unless applied in a practical, humane and understanding manner, modified if necessary to meet the requirements of the individual. One sees too many frustrations resulting from the inflexible routine of strictly scientific endeavor. There is the physician so trained in a given specialty that he remains aware only of his limited sphere and finds the ant hill instead of the mountain which glaringly rises before him. We all know that profound scientist who possesses all the answers to the store of medical questions, who has passed brilliant examinations and yet who fails miserably as a physician because his knowledge is at loose ends and cannot be correlated when prompt correlation is imperative. When we require the services of a physician for our families we would not choose this type of ultrascientist but rather the inspiring level-headed practitioner, whose experience has endowed him not only with the science, but amply with the art of medicine.

It is regrettable that the student is too often under the influence of the ultrascientist who remains cloistered in an environment that recognizes little of the art of medicine. The passing generation of teachers possessed the art of medicine to a generous degree. The individual, rather than his disease, must be correlated with the individual, the patient must be regarded as a human being and not as a nondescript case, and the human side of the problem must be stressed. Until this concept is more universally adopted, our medical schools will turn out technicians rather than well equipped physicians. This hazard has never been greater than it is today, owing to the modern trend of medical mechanization. This is one reason why the young physician yearns for metropolitan practice so that he may live and work in the shadows of a laboratory, which he has been led to believe is indispensable. It is true that the laboratory is important, but when these methods are stressed beyond their practical application and supersede the physician's first line of defense, namely physical diagnosis, then I am certain that we have lost the primary objective of a truly noble profession.

There is no reason why the assets of the various methods of medical appraisal and practice cannot be practically combined so that the science and the art of medicine can walk side by side. There is little doubt that in the routine practice of medicine more triumphs result from the well blended science and art of medicine than from science alone.

WHY I WANT TO BE A DOCTOR

At the beginning of the school year 1939-1940 Dr. Waller S. Leathers, the dean, requested the members of the first year class at Vanderbilt University School of Medicine, Nashville, to prepare an essay on the subject "Why I Want to Be a Doctor." In response to this request fifty-two essays were turned in and analyzed from the point of view as to how or in what way the following factors influenced each individual in choosing medicine as a profession:

1. Family, including members who are or were doctors.
2. Environment or natural bent.
3. Profession other than family.
4. Subjective.
5. Miscellaneous.

Under the heading of objective reasons twenty-seven students were influenced by the example of professional relatives, twelve by nonprofessional influence, mother, father and others. Eighteen students reached their decision independent of any stated personal example or influence. Two made the decision in spite of discouragement from their parents.

The subjective components were broken down into eight main headings:

1. Early inherent desire; thirteen mentioned this factor.
2. Interest in science courses; this affected twenty-two decisions. Concrete examples mentioned were "love of physics" and interest in psychology and anthropology.
3. Desire for happiness, cited by ten.
4. Desire for economic security, expressed by thirteen.
5. Desire for esteem of others; fourteen gave this reason. Parents and members of medical profession are given as examples.
6. Curiosity, a factor in three decisions.
7. Desire for knowledge influenced fifteen. "Spirit of adventure," "challenge of the difficult" and "field of research" are given as specific motives.
8. Desire to serve humanity, a prevalent factor, influenced thirty-six decisions. Five mentioned an interest in preventive medicine and public health. One named Christian service as a motive.

The striking feature noted in these discourses is the unanimity in those factors considered as of major importance both by students and by the analyst, Dr. Beverly Douglas. The desire to serve humanity was expressed by thirty-six members as a factor strongly influencing their decision. Each of the number discusses this reason at some length, and in the discussions the choice of words and syntactical methods reveal an underlying similarity of basic motive which is astonishing. The decisive influence of family, especially professional family, is also clearly brought out. It would be of interest to be able to compare this analysis of the present group with that of a similar group in other medical schools in various parts of the country.

THE TUTORIAL SYSTEM IN HARVARD MEDICAL SCHOOL

Abstract of an article by Dr. Walter Bauer, published in the Journal of the Association of American Medical Colleges, March 1940.

Twenty years ago Dr. David L. Edsall introduced to Harvard Medical School an innovation in methods of teaching which was a modified form of the Oxford tutorial system. He observed that in our efforts to improve mediocrity we wasted some the finest material in each class and contended that we should allow for the fullest development of the exceptional student as well as the mediocre one. That some medical students do not think was considered the result of the faculty's tendency to tell students what to do and what to think. Many of the products of this system of education are intelligent, but they lack the boldness necessary for departure from the routine. Thus the average student soon tends to believe only what he reads. Edsall thought that the tutorial system might remedy these defects in education.

The system as originally outlined was to allow four tutors, one each in physiology, pathology, medicine and surgery. The students chosen show evidence of superior capacity. No one tutor attempts to direct the work of each man in his group but places each student in intimate contact with the particular member of the faculty best fitted for his needs. The purpose of the tutorial system is to send into medicine men with scientifically trained minds. The majority of men exposed to this system practice medicine. There are rarely more than fifteen men in any one class assigned to tutorial work.

The system has demonstrated that, if given a suitable problem, achievement can be made by a determined student in the time available in his second and third years. Organized series of lectures or conferences or any other form of group instruction are avoided, as the regular curriculum affords an excess of this sort of intellectual exercise. Each student is given a problem to investigate. The tutorial students are required to take the routine medical curriculum throughout the first three years. In the fourth year they are allowed a period of from four to five months for this special work with a member of the faculty.

Some of the men do continuous research along a specific line throughout their four years in medical school. In most instances the students electing tutorial work anticipate most of the prescribed regular work by taking two or three months of summer work. It is impressed on the student that the laboratory is not a sanctuary for the worship of authorities but a free dwelling for students conscious of the faults and the virtues of those who surround them.

Sufficient time has not elapsed to determine the fate of all students subjected to this type of teaching. It seems fair to examine the records of sixty-two men from the classes of 1925 to 1929. Three have died, thirty-four graduated with honors, fourteen are in full-time work; the remaining twenty men are engaged in practice. Of the twenty-five men who graduated with a grade of C, seven are in full-time work, eighteen are practicing medicine. The results seem to suggest (1) that medical students can engage in special extracurricular work along one line without jeopardizing their regular work and (2) that a large percentage of men exposed to this type of training contribute to the advancement of medicine. Some have stated that the most important decision made in medical school was that they should do what they had always thought wrong; i. e., depart from the schedule and take free elective work in their fourth year.

Men who practice medicine may advance medical science as effectively as does the laboratory monk. The development of such traits in the practitioner of medicine should in no way interfere with his practice of the art of medicine.

THE CLINICAL PATHOLOGIST

Abstract of presidential address by L. W. Larson before the American Society of Clinical Pathologists and published in the American Journal of Clinical Pathology, July 1940.

Ten years ago there was already a tendency to differentiate between the pathologist and the clinical pathologist. This development of a specialty within a specialty is not peculiar to our branch of the practice of medicine; some internists have become cardiologists and some surgeons have become orthopedic surgeons. Clinical pathologists began as individual units. Today the clinical pathologists who depend primarily on a so-called private or commercial laboratory for a livelihood are few. The increasing knowledge of the laboratory sciences on the part of clinicians, the development of hospital laboratories which have encouraged clinicians to send them work, and the ever increasing scope of tax supported laboratories in city, county, state and nation have driven practically all our members to the shelter of a hospital laboratory. This has created serious problems, for too many hospital managements have attempted to derive a handsome profit from the clinical laboratory at the expense of the pathologist. Even the many varieties of hospital insurance plans have created a grave situation for the clinical pathologist in that he has been faced with the problem of contributing a professional service for an institution which is not authorized by law to practice medicine. In most instances he has not been remunerated for extra burdens thrust on him as a result of these insurance plans.

One of the gravest problems confronting the clinical pathologist is that of the supertrained technologist. We are the creators of this situation, because we pioneered the movement to standardize schools for medical technologists and raised the requirements to such a level that only those with adequate college training in the fundamental sciences and thorough training in a clinical laboratory under the direct supervision of a competent clinical pathologist can even qualify for the examination given by our board of registry. As a result there are about 6,000 medical technologists registered today, each one of whom is presumably competent to perform all laboratory tests. Are we justified in criticizing the well trained clinician who maintains his own laboratory, hires a registered technologist to do the work and interprets the results himself? We may question the ability of most clinicians to do these things, but it is useless to doubt their right to think that they can do them. It will be better for us to look for new horizons or to concentrate on those which we have had with us daily but have rarely taken the time to observe.

The younger men and women have been well instructed in this field, especially those who have spent from three to five years preparing themselves for the practice of a specialty. Except in the large hospitals or clinics, only one part of laboratory diagnosis remains which demands special training and experience, and that is the field of pathologic anatomy. Our society has realized this fact by fostering a yearly seminar in tumor diagnosis. These seminars have impressed our clinical brethren to see in them an effort to standardize classification of tumors and other pathologic changes and to render to him and his patient a competent opinion. The field is not restricted to surgical pathology but includes postmortem pathology, whereby the ravages of disease are viewed in the light of clinical symptoms and observations.

Hematology also seems to be a field remaining for the clinical pathologist, although more and more clinical hematologists are being trained. The majority of clinicians know little of the abnormal blood cells seen in many blood films. Few technologists are so well trained that they can accurately diagnose the leukemias, to say nothing of the difficulties encountered in leukemoid reactions, bone marrow depression or dysfunction due to drugs. Our society should continue to sponsor the excellent hematology seminars it has conducted in various parts of the country during recent years, for hematology still remains a pillar on which the clinical pathologist can lean for his economic security.

In addition to being well versed in the usual laboratory procedures and to being a specialist in pathologic anatomy and hematology, I believe that the clinical pathologist must learn more about, and be more interested in, the clinical patient. If he is able to take a good clinical history and perform a routine physical examination, he will soon be the most popular consultant on the staff, because his knowledge of pathology will often enable him to interpret clinical signs and symptoms when his clinical brother cannot. He will then be a "consulting physician" in clinical pathology. I urge all of you to develop into true physicians, so that you will no longer be called by such omens as "the laboratory man."

Correspondence

DR. GEORGE GOODFELLOW OF TOMBSTONE

Jan. 28, 1941.

To the Editor:—In the Student Section, January 25, page 352, is a paragraph about Dr. George Goodfellow of Tombstone, Ariz. I would like to add to that.

In 1889-1891, while he was practicing at Tombstone, I was a contract surgeon at Bisbee, 28 miles away. During that time we not infrequently operated together, and I went to Tombstone a number of times to assist him in operations. I can testify to the fact that he was a rapid and a skilful surgeon, many times doing major operations alone. I am certain that he did the first operation for the removal of a prostate, which operation was done in Tucson, and my recollection was confirmed last fall in a conversation I had with Dr. Jeremiah Metzger of Tucson. I remember one case of his in which he removed a spleen because of a gunshot wound, which operation he did entirely alone; undoubtedly the patient would have lived had he been able to see the patient a little sooner but the patient had to ride 8 miles and was white from loss of blood. I feel that one cannot say too much for him as a great surgeon.

THOMAS DARLINGTON, M.D., New York.

DO YOU KNOW WHAT PHYSICIAN—

1. Attended George Washington in his last illness?

2. Was one of the original signers of the Declaration of Independence?

3. Performed the first mastoidectomy in the United States?

4. Wrote the first work in America on skin diseases?

The answers are on page 796

Medical College News

Medical schools, hospitals and individuals will confer a favor by sending to these headquarters original contributions, reviews and news items for consideration for publication in the Student Section.

Interns' Case Report Contest

The Allegheny County Medical Society in Pittsburgh is conducting its annual case report contest for interns of the hospitals of Allegheny County. The rules of the contest specify that manuscripts shall be mailed to the secretary, Allegheny County Medical Society, Jenkins Arcade, Pittsburgh, prior to April 1. Other details were given in the announcements sent to each intern. This contest, which has been carried on for many years, is for the best case report submitted and it is intended to be an incentive for interns completing their medical training, giving them experience in the correlation of clinic material and in medical composition and writing.

Postgraduate Students at Columbia

During the year ending June 30, 1940, Columbia University College of Physicians and Surgeons, New York, offered 249 postgraduate courses in thirteen hospitals, which were attended by 1,061 physicians from forty-three states, Alaska, Hawaii, Philippine Islands, Puerto Rico and twenty-three foreign countries. The dean, Dr. Willard C. Rappleye, in his annual report says that in keeping with the trend to eliminate from general practice major surgical and other highly technical procedures, it is interesting to note that the majority of physicians taking a postgraduate course elected studies in the field of internal medicine.

Iowa

The following sophomores at the University of Iowa School of Medicine, Iowa City, were elected to Phi Beta Kappa, Dec. 16, 1940: John R. Beebe and Delbert M. and Elwood Buchman of Ottumwa; George F. Fieselman, of Garden Grove; John A. Hutch, of Cedar Rapids, and Gabriel T. Westly of Manly.

At the second student-faculty meeting of the year on January 14, Dr. H. R. Jenkinson, Iowa City, gave a talk illustrated with kodachrome slides on the subject "Wild Flowers of Iowa," including comments on the medicinal uses of some of these flowers. At the student-faculty meeting last November 12, Dr. Robert T. Tidrick, who spent a year as an intern in Cairo, Egypt, spoke on "A Comparison of Egyptian and American Patients."

Creighton Students Assigned to Summer Dispensary

In the summer of 1939 the students at Creighton University School of Medicine, Omaha, were required for the first time to put in six weeks in the summer dispensary, the senior class being divided into groups which rotate during the season. The number of patients visiting the dispensary during the year 1939 was 39,464. Recently the university erected a two story building, the first floor of which provides an addition to the medical dispensary, making room for special clinics, each completely equipped.

Indiana

Dr. Robert C. Badertscher, Indiana '40, who is now interning at Indiana University Medical Center, Indianapolis, has received an appointment for a three year residence in internal medicine at the Mayo Clinic, Rochester, Minn., and will take up his new work in July. Dr. Badertscher is the son of J. A. Badertscher, Ph.D., of the faculty of Indiana University School of Medicine.

Long Island's Freshman Class

The 100 freshmen at Long Island College of Medicine, Brooklyn, brings the total enrolment at the school at present to 371 students, the maximum number allowed under the present policy of the board of trustees being not more than 375. The freshman class comprises students from Connecticut, Maine, Massachusetts, New Jersey, New York, Tennessee and Vermont, and one foreign student, Abu T. Mehra, of Teheran, Iran. The officers of the freshman class, who will serve through the four year term, are George L. Breen, Pompton Plains, N. J., president; Alexander Garcia, Forest Hills, L. I., vice president; Margaret H. Doyle, Brooklyn, secretary, and Michael J. Hyland, Harrison, N. J., treasurer. The two student council members in the freshman class are Charles W. Kelly of Brooklyn and Mr. Mehra.

General Assemblies at Illinois

Each Wednesday at 1 p. m. the students and faculty at the University of Illinois College of Medicine, Chicago, conduct general assemblies. At the Dec. 4, 1940 assembly, Lt. Col. Charles G. Hutter, M.C., U. S. Army, discussed "Military Medicine"; Capt. Harold C. Lueth, "Medical Problems in Air Warfare," and Dr. R. G. Leland, director of the Bureau of Medical Economics of the American Medical Association, "Mobilization of Medical Forces." The program for the January 1 assembly was on the "Aspects of Medicine and Public Health in South America."

Oklahoma—Seniors Assist Draft Board

Members of the senior class of the University of Oklahoma School of Medicine, Oklahoma City, have been assisting the local draft board in that community by doing some of the laboratory work on the draftees. Six senior students, rotating daily, assist in this laboratory work.

Dr. Ernest Sachs, professor of clinical neurosurgery, Washington University School of Medicine, St. Louis, gave the annual LeRoy Long Memorial Lecture in the Auditorium of the University of Oklahoma School of Medicine, February 7, on "Surgery of Brain Tumors Today and Ten Years Ago." This lecture is sponsored by the local chapter of Phi Beta Pi and was founded in memory of Dr. LeRoy Long Sr., former dean of the medical school.

Scholarships for Papers on History of Endocrinology

The Association of Medical Students has announced a competition among medical students in the United States and Canada for the purpose of fostering interest in the subject of endocrinology and to encourage and aid able and gifted medical students. For this purpose the Schering Corporation will award one full year's and one half year's tuition in any medical school in these countries for the best papers on some aspect of the history of endocrinology. If the author of the winning paper is a senior, he will receive the cash equivalent of his tuition. The judges will be a committee of leading endocrinologists, and the award will be made at the next annual meeting of the Association of Medical Students in Chicago in December 1941. All students interested in this competition should communicate at once with the Committee on the Schering Award, c/o The Journal of the Association of Medical Students, 25 Madison Square, N., New York City.

Professor Dam Lectures at Western Reserve

Students, physicians and members of allied professions were invited to the Institute of Pathology at Western Reserve University, Cleveland, February 11, to hear a lecture by Prof. Henrik Dam, Biochemical Institute, University of Copenhagen, on vitamin K, which he discovered. Professor Dam has lectured in various cities in England, Sweden, Norway, Denmark, Holland and Germany; his lectures in the United States are under the auspices of the American-Scandinavian Foundation.

The DeWitt Sherman Hall at Buffalo

The late DeWitt Halsey Sherman, for many years professor of pediatrics at the University of Buffalo, bequeathed to the university a sum of money for the erection of a new medical building, and his widow, Jessica Anthony Sherman, has added to the sum sufficient to make the total about a half a million dollars. The will provides that if a building has been constructed by the time the funds become available, the money shall be placed in trust for the endowment of teaching. Dr. Sherman, a graduate of the University of Buffalo, died in February 1940.

Illinois Seniors Request Degrees in June

The entire senior class of the University of Illinois College of Medicine, Chicago, has petitioned the deans of the school requesting that the M.D. degree be awarded in June. Their action was prompted by the belief that the M.D. degree would qualify them to do medical work in case they were conscripted, and would give those who desire an opportunity to join the medical reserve corps. The *Illini Scope* points out that of all the medical schools in the country, only eleven still withhold the degree until the end of the fifth year. The reason for doing so was to assure that graduates would serve an internship. That function now has been taken over largely by the state licensing boards. Of more than 5,000 medical school graduates in 1940, it is said that only one man went directly from medical school into medical practice.

Women in Medicine

Since 1917 there have been fifty-five women graduates of Long Island College of Medicine and there are twenty-five women students at present at the school, ten of whom are in the freshman class. At the request of the faculty, the chairman of the Committee on Admissions sent a questionnaire to the thirty-four women who graduated during the years 1920-1935. Of the thirteen who replied, all took internships and are now in active practice. All are members of their county medical societies. Four are in general practice, two in obstetrics and gynecology, one in obstetrics and pediatrics, one in psychiatry and one in public health.

Annual "Follies" Provide Library Fund

The twelfth annual Medical Follies, presented Dec. 6, 1940 by seventy members of the junior class of Baylor University College of Medicine, Dallas, Texas, before an audience of 3,000 people, showed a net profit of more than $4,000, most of which was turned over to the permanent library fund which, together with the contributions of the Baylor Alumni Association, amounts to about $70,000. Construction of the new library has begun and it is expected to be completed in the spring of this year. The growth of the annual Follies of the junior class has been rapid. The first production was given in a small auditorium seating a few hundred, and the show was written for the entertainment of the student body and alumni. Since then they have had to change to a larger auditorium three times to accommodate the patrons, and six years ago Dr. William W. Looney, of the department of anatomy and sponsor of the Follies, suggested the idea of establishing a permanent library fund with the profits as a nucleus. The success of the Follies is due in part to the cooperation of the alumni and, as our correspondent says, to the ever present curiosity of the average layman who wishes to know more about the private life of a physician, his problems, and the like. To satisfy curiosity, this group has written and presented "The Life of a Medical Student" and "The Problems of the Medical Profession." The medical students have not only written the dialogue but have acted and directed the plays. Student Charles L. Bloss, 3612 Worth Street, Dallas, Texas, will furnish additional information to any group of medical students who desire to undertake similar ventures.

Duke University

At the beginning of the winter quarter there were 239 medical students at Duke University School of Medicine, Durham, N. C., and 140 student nurses were enrolled. Laurence H. Snyder of Ohio State University College of Medicine, Columbus, is giving a series of lectures during January, February and March at Duke on medical genetics. At a meeting of the Duke Medical Society, January 14, Dr. Tinsley R. Harrison, professor of medicine at Bowman Gray Medical School of Wake Forest College, discussed hypertension.

National Board Questions in Obstetrics

Following are the questions used by the National Board of Medical Examiners in obstetrics and gynecology in part II of the examination held February 12-14, 1940. (Part II of the examination is given immediately after graduation from medical school.)

Answer any five questions: 1. Describe in detail the management of labor in a frank breech presentation. 2. Give the characteristic findings of intrauterine fetal death in the seventh month of pregnancy. 3. Is puerperal sepsis preventable? If so, indicate the preventable factors. 4. Name four laboratory procedures you would institute in the study of a case of sterile mating. 5. Describe the clinical manifestation of carcinoma of the cervix and give in detail the treatment and prognosis. 6. Give diagnosis, treatment and management of leiomyomata uteri in a young unmarried woman. 7. Give the treatment of uterine retro-flexio-version in (a) a nulliparous woman, (b) a multiparous woman.

Wisconsin State Board Questions

The following questions were given by the Wisconsin State Board of Examiners at the examination in Milwaukee, June 26, 1940:

MATERIA MEDICA

1. Name four common vitamins and give indications for use of same.
2. Give indications for use of sulfapyridine—
   State precautions to be observed and give dose.
3. Name principal alkaloid of belladonna—
   Give dose of same and at least three indications for its use.
4. Give adult dose and therapeutic use of following drugs—
   (a) Silver nitrate
   (b) Codeine sulfate
   (c) Ferrous chloride
   (d) Nitroglycerin
   (e) Tartar emetic
5. (a) Name two respiratory stimulants—also dose of same.
   (b) Name two vasomotor depressants—also dose of same.
6. Name three diuretics and give dose of each.
7. Name five antiseptics and give their proper dilutions for surgical purposes.
8. Give briefly the therapeutic use of—
   (a) Sulfur preparations
   (b) Mercury preparations
   (c) Bismuth preparations

   Mention at least three forms of each with proper dose.

TOXICOLOGY

1. Give symptoms and treatment of atropine poisoning.
2. Describe symptoms of hydrargyrism.
3. State symptoms and treatment of carbon monoxide poisoning.

Hospital Insurance for Students' Dependents at Georgia

A recent development at the University of Georgia School of Medicine is the inauguration of a plan of hospitalization insurance for the wives and children of medical students. Last year the administration of the medical college sponsored a hospitalization plan for the students, each student having paid $2.50 for protection during the nine month term. The plan worked so well that the dean, Dr. G. Lombard Kelly, suggested extending it to the dependents of students. It is estimated that at least 15 per cent of the students are married, some of them having several children. The plan was presented to the student body and received unanimous approval. Now each married student is permitted to insure each of his dependents for a premium of $2.50 for nine months. Obstetric cases are not included in the coverage.

The Hamman Society at Western Reserve

A group of twenty junior and senior students at Western Reserve University School of Medicine, Cleveland, are members of the Hamman Society, which was named in honor of the late Dr. Carl A. Hamman, formerly dean and professor of clinical surgery. At their meetings, the members present original papers and discuss diagnostic problems, with honorary faculty members acting as referees. The society held an open meeting during the last school year which was addressed by Dr. Paul W. Harrison, a medical missionary stationed in Arabia. The Hamman Society also gives a banquet annually to which all members of the faculty are invited.

Western Reserve Grows Its Own Digitalis

All the digitalis used in the hospitals affiliated with Western Reserve University School of Medicine, Cleveland (Cleveland City Hospital, St. Vincent's Charity Hospitals and University Hospitals), is grown on a farm given to the university by the late Andrew Squire. After the fox glove plants are harvested the leaves are assayed in the School of Pharmacy, which also makes the tablets and tincture of digitalis for use in the hospitals.

New A. O. A. Members at Texas

The following ten members of the senior class, who comprise the top sixth of the class with regard to grades, have been elected members of Alpha Omega Alpha honorary medical fraternity: Hugh F. Arnold, Ernest S. Cunningham Jr., Harold J. Tausend, Robert E. Hurn, James T. Downs III, Jack M. Lynn, John E. Alexander Jr., Ronald M. Burnside, George S. Woodfin and Samuel A. Hoerster Jr.

New A. O. A. Members at Cornell

The following students at Cornell University Medical College, New York, have been elected members of Alpha Omega Alpha: Elizabeth N. Conover '41, Oscar E. Goldstein '41, Henry H. Graham '41, Charles E. Holzer Jr. '41, Richard R. McCormack '41, John J. Thorpe '41, George A. Wolf Jr. '41, Preston S. Weadon '41, John T. Flynn '42, John B. Pfeiffer '42 and Franklin Robinson '42.

Ohio State University

Members of the senior class recently elected to Alpha Omega Alpha at Ohio State University College of Medicine, Columbus, are the following: Saul C. Sigelman, Harold I. Farber, Harold K. Treece and Marion T. Moreland. Those of the class initiated into the local chapter as juniors are F. Miles Flickinger, Abrigail Cohen Englender and Robert E. Reiheld.

Jefferson Medical College of Philadelphia

Prof. Henrik Dam of the Biochemical Institute of the University of Copenhagen, addressed a large audience of students and physicians, January 10, at Jefferson Medical College of Philadelphia on "Vitamin K—Its Role in Human Pathology and Its Application to Therapeutics."

At the recent election, the junior class at Jefferson elected E. W. Connelly, president; Edmund T. Hackman '41, vice president; Robert H. McCarter II '42, secretary, and Joseph J. Rupp '42, treasurer.

The William Harvey Society

The William Harvey Society at Tufts College Medical School, Boston, is one of the activities of the Student Activity Plan and its purpose is to bring prominent members of the profession to the school occasionally to address the students. The president of this group this year is David M. Curtis '42. In the last two months this group has been addressed by Dr. Elliott P. Joslin, clinical professor of medicine, Harvard Medical School, Boston, and Dr. Maxwell M. Wintrobe of Baltimore.

The Louis Pasteur Club at Tufts also has become more active recently in student activities, having been addressed by Drs. Frederick L. Good and Frederick W. O'Brien, both members of the Tufts faculty.

Oklahoma

Mr. William H. Reiff, '41, of the University of Oklahoma School of Medicine, Oklahoma City, was elected to Toga honorary fraternity, the members of which are outstanding students of the professional schools of the university.

"DO YOU KNOW WHAT PHYSICIAN"

Following are answers to the questions appearing on page 793.

1. Dr. James Craik, who was a long-time friend of Washington and was surgeon in the Virginia Provincial Regiment in 1754, of which Washington was the commander. After the Revolutionary War he made his home at Alexandria, Va., in order to be near Washington, who lived at Mount Vernon. Dr. Craik died Feb. 6, 1814, about fifteen years after Washington passed away.

2. Dr. Benjamin Rush who graduated from Princeton in 1760 and from the University of Edinburgh in 1768. He was the chief founder in 1786 of the Philadelphia Dispensary. He was treasurer of the United States Mint from 1799 to 1813. Dr. Rush offered a motion before a group appointed by a mass meeting of citizens June 23, 1775 to draft an address in favor of American independence. He was delegated to prepare a report, which was adopted the following day and submitted to the Continental Congress. Much of the phraseology of this report is said to have been included in the Declaration of Independence.

3. Dr. Lawrence Turnbull (1821-1900), who lived most of his life in Philadelphia, although he was born in Scotland. At one time he was vice president of the Pennsylvania State Medical Society.

4. Dr. Noah Worcester, a native of Thornton, N. H. a graduate of Harvard University in 1832 and of Dartmouth Medical College in 1838. He pursued further studies in Paris in 1841, in 1843 he became professor of general pathology, physical diagnosis and diseases of the skin in the medical department of Western Reserve College in Cleveland. His book on diseases of the skin was published in 1845, having been written while he suffered from active tuberculosis, of which he died in 1847.

Book Notices

Management of the Cardiac Patient. By William G. Leaman Jr., M.D., F.A.C.P., Assistant Professor of Medicine in Charge of the Department of Cardiology, Woman's Medical College of Pennsylvania, Philadelphia. Cloth. Price, $6.50. Pp. 705, with 255 illustrations. Philadelphia, Montreal & London: J. B. Lippincott Company, 1940.

The principle of presenting cases for illustration in the management of a cardiac patient, although not new, is an excellent one, particularly for undergraduate students and for the practitioner who has not had time to keep abreast of modern cardiac therapy. Unfortunately, this book lacks clarity and direction and there is too much of inadequately given methods for diagnosis and diagnostic procedures rather than remaining firmly within the bounds of its title. Although the material presented in a great many instances is excellent, it is poorly arranged. For example, separate chapters listing angina pectoris, coronary sclerosis and thrombosis and the senile heart should all come under management of coronary sclerosis. The cases given for illustration are in many instances much too incomplete and sketchy and do not present a clear vivid picture of either the disease illustrated or the management. There has been little attempt to explain or rationalize therapeutic procedures on a physiologic basis. The chapters on treatment are often not sufficiently specific to be of much help; for example, the recommendation of enemas in the treatment of coronary thrombosis without mentioning what kind of enemas or how they are to be given. The pathologic illustrations are often poor, particularly those in color, and add little to the clarity of the book. It seems that electrocardiography has but little place in a book of this type, and the chapter, although fairly well written, is not sufficiently good to compare with some of the standard textbooks on this subject. Although a great many helpful and practical suggestions are given, and some sections are excellent, the book as a whole cannot be recommended as a coherent or scientifically modern book on the management of heart disease.

The Mammogenic Hormone of the Anterior Pituitary. I: The Duct Growth Factor. By A. A. Lewis and C. W. Turner. University of Missouri College of Agriculture, Agricultural Experiment Station Research Bulletin 310. Paper. Pp. 72, with 18 illustrations. Columbia, 1939.

The present bulletin records in detail the observation of Turner and his associates on mammogen, the duct growth factor of the pituitary gland. Data were secured on 545 individual cattle pituitaries, and differences in weight were found to be related to castration, sex, pregnancy and lactation. Weights of the pituitary gland, thyroid and adrenals of New Zealand rabbits also are recorded. The duct growth factor has been assayed by its ability to stimulate the normally rudimentary ducts in the breasts of the male mouse, and a unit has been defined. The chemical properties of this pituitary factor suggested that it was separate from other principles. It was distinguished from the pituitary hormones by its solubility in lipid solvents and from estrone by its heat lability. The assay of the pituitary glands from cattle indicated that the duct growth factor was low in early and late pregnancy, rising to a maximum at about one hundred and fifty days. It was consistently higher in dairy than in beef animals, highest during lactation, and higher in females than in males. Some evidence of a correlation between the duct growth factor in the pituitary and follicle and corpora lutea development in the ovary is presented. In rabbits, estrogen treatment increased the mammogen content of the pituitary. Active extracts were found to develop the duct system in spayed mice, male mice, spayed rabbits, male rabbits, and 2 of 5 hypophysectomized ground squirrels. These observations would appear to be of interest in a consideration of the factors which may influence the breast, although much more information is still necessary concerning the role of the sex glands and adrenals, and their action through the pituitary gland. In the bulletin discussed there was no evidence that mammogen would produce lobule hyperplasia in the mammary glands. A correlation between the activity of the duct growth factor as assayed by the mouse method and its effect on growth of the male guinea pig's nipples would be of value.

The Doctor and His Patients: The American Domestic Scene as Viewed by the Family Doctor. By Arthur E. Hertzler, M.D. Cloth. Price, $2.75. Pp. 316. New York & London: Harper & Brothers, 1940.

This book is an extension of a chapter in the author's previous volume "Horse and Buggy Doctor." Out of his experience with his patients the author has evolved a philosophy concerning love, sex, marriage, divorce and their physical, psychologic and sociologic consequences. It is a theory which is sharply at variance with accepted concepts in these fields. It is based on the idea that love and sex have nothing to do with each other and that genuine love is possible only in the absence of sex and can be found, therefore, only in the love of child for parent or parent for child or in affections of the aged and those who for one reason or another have turned their backs on sex. In this theory the conception of sex is strictly that of the barnyard. A common analogy found in the text is that between man and bull, each being pictured as essentially without affection and interested only in the satisfaction of sexual urges. Woman is often pictured as a mercenary, designing creature, entering on marriage only for the sake of assuring herself a "meal ticket" or the opportunity of spending her husband's money. The entire philosophy is a dreary, cynical, hopeless and spiteful tirade against the institution of marriage. It offers nothing constructive. The principal recommendations made are that the minister who performs the marriage ceremony and the judge who grants the divorce be banished and the doctor substituted. In view of the prevalence of loose thinking and the almost universal reliance on snap diagnosis and the administration of sedatives manifested in the book, one would hardly expect much improvement if the recommendation could be put into effect. The book is lengthy beyond all justification and is depressing and tedious. Many of the attempts at humor are distinctly adolescent.

Diagnosis and Treatment of Diseases of the Hair. By Lee McCarthy, M.D., Attending Dermatologist to Garfield Memorial Hospital, Washington, D. C. Cloth. Price, $9.50. Pp. 671, with 291 illustrations. St. Louis: C. V. Mosby Company, 1940.

There is obviously an advantage in having a separate reference on this subject, although it must be noted that a great many of the conditions described affect not only the hair but the skin, and many textbooks of dermatology include adequate discussion of the diseases of the hair. This book would seem to be useful for those who wish to make a special study of the hair. Separate chapters deal with disturbances in pigmentation of the hair, atrophies of the hair, hypertrophies of the hair, diseases of the follicles, other diseases of the scalp, the relation of the endocrine glands to the hair and, finally, benign and malignant growths that may occur on the scalp. The various diseases are discussed at length and the treatments for them described in detail. At the end of most of the sections is a bibliography for further reference on that particular disease. A more extensive index would make the book more useful. Some textbooks of dermatology discuss the condition known as plica polonica (Polish plait), but no mention of it was found in this volume. The author claims in his preface that "Many physicians and not a few dermatologists profess an almost complete ignorance of the cause of many diseases of the hair, and they are accordingly unable to answer the questions put to them by patients. As a result the coiffeurs and beauticians are consulted today much more frequently on the subject than are physicians." Presuming this to be an accurate description of the present situation, there would seem to be a definite place for this volume.

Organic Reagents Used in Quantitative Inorganic Analysis. By Wilhelm Prodinger, Ph.D. Translated and amended from the second German edition by Stewart Holmes. With a foreword by O. Baudisch, Ph.D., New York State Research Institute of the Saratoga Spa, Saratoga Springs, N. Y. Cloth. Price, $5. Pp. 203. New York: Nordeman Publishing Company, Inc., 1940.

Research in the field of organic reagents for use in analytic chemistry has shown such an increase recently that the second edition of this monograph has appeared within two years of the first. It consists of a list of organic reagents and describes the methods by which they may be used in the determination of inorganic radicals. The procedures are succinct and in some cases too much curtailed, but the excellent bibliography overcomes this objection. The English edition is a rather literal translation of the German and does not read smoothly in some places, but this does not detract from its accuracy. The few

illustrations are of common apparatus and are considered superfluous. Certain of the structural formulas may be questioned by meticulous organic chemists, but most discrepancies are due to inaccuracies in the literature rather than to the author. A few revisions have been made and the translator has added two pertinent chapters—one on "Oxine" and one on "Neocupferron." The ready availability of such a collection of analytic procedures will be of great value to laboratories in which determinations of inorganic radicals are carried out.

Functional Diseases of the Intestines. By Gustav Singer, M.D. Cloth. Price, $2.50. Pp. 80, with 27 illustrations. New York & London: Oxford University Press, 1939.

This monograph consists of an expansion of a lecture before the Hunterian Society in 1938. It is chiefly a review of experimental work of the European school and of the author. In an attempt to explain the etiologic basis of the common functional intestinal disorders, it presents to the reader a summary of the pathologic physiology concerned, emphasizing chiefly neurogenic factors. The anatomic and physiologic discussion of the autonomic nervous system, together with the description of motor and secretory physiology, is hardly more than one would find in any good textbook on physiology. Topics are divided into dyspepsia, disorders of motility, diarrhea, constipation, ileus, diverticula, autointoxication and autoinfection, allergy and "neuroses." Aids to diagnosis, differential diagnosis, diet and environmental influences are also discussed. Foreign terminology and sentence structure make for some difficulty in reading. The book has a definite value for those not well acquainted with the subject.

Bacillary and Rickettsial Infections, Acute and Chronic: A Textbook. Black Death to White Plague. By William H. Holmes, Professor of Medicine, Northwestern University Medical School, Chicago. Cloth. Price, $6. Pp. 676. New York: Macmillan Company, 1940.

The recent death of Dr. Holmes focuses attention on this fundamental contribution to medical science. The book has charm and literary quality possessed by few other works in the medical field. Among the conditions concerned are plague, tularemia, typhus, undulant fever, Rocky Mountain spotted fever, cholera, typhoid, the dysenteries, diphtheria, leprosy, tuberculosis and a number of bacillary infections. The method of presentation, the arrangement of headings and subheadings, the historical articles and the extensive bibliography combine to offer something distinctive in the field of medical writing. The work indicates great scholarship and insight into the educational problems of students which bespeak its wide use in medical education. Here is a textbook which may be read with the kind of ease and pleasure associated with a classic like Osler's textbook on the Practice of Medicine. To the publisher much credit is due for the quality of the presentation of this unusual material.

Physical Diagnosis. By Ralph H. Major, M.D., Professor of Medicine in the University of Kansas, Kansas City. Second edition. Cloth. Price, $5. Pp. 664, with 437 illustrations. Philadelphia & London: W. B. Saunders Company, 1940.

The author has been a teacher of physical diagnosis for many years. His book reflects the point of view of the physician who relies largely on his well trained five senses for the diagnosis of disease. He tries to emphasize that physical signs are produced by physical causes, which must be understood before the physical signs can be properly appreciated. He has a yen for the classic descriptions made by pioneers in certain fields of medical investigation at a time when they had to rely on their senses instead of on mechanical procedures which are much in use today. His book is well illustrated with recent pictures and yet some of the illustrations are those used by the pioneers; for example, Traube's original curve of pulsus alternans, which, the author says, is of more interest than any of the many curves of this condition which have been made since. Osler once said "when you can, read the original descriptions of the masters who, with crude methods of study, saw so clearly." Probably this suggestion caused the author to quote from many of the descriptions of the old masters. But the book is modern and, with the second edition following the first in three years, it undoubtedly has served to help those who are practicing physical diagnosis without the aid of expensive and sometimes unnecessary mechanical equipment.

Your Mental Health or Outwoss Mental Health and Mental Disease for Intelligent Laymen and Physicians. By E. Liber, M.D., Dr.P.H. Cloth. Price, $3. Pp. 406. New York: Meller Books, 1940.

Here is an attempt at popularization of mental hygiene, prefaced by the publisher with a number of testimonials which would seem to serve as a warning as much as an endorsement. Actually the book is a record of the author's practice concerned with questions in the field of mental disturbances, written in journalistic style, almost like a day-to-day diary. Here is an example:

> Any physician in private and general practice may be called in an emergency to diagnose some form of true or false psychosis and should know how to distinguish it from intoxication or from more or less normal emotional states.
>
> One doctor was taken by the alarmed policeman on the beat to see a young girl, who, arriving at two o'clock in the morning with her boy friend in an automobile, had climbed into her parents' stoop apartment through the window. The officer, in the face of the young woman's opposition to be removed to the police station, had diagnosed insanity and, to prove it to her parents, wanted the nearby doctor's corroboration. The physician, however, hurriedly reaching the scene in his night-robe, found the offender just drunk—and that settled the question.

Altogether, the book gives the impression of hasty preparation and confusion. Its value for the prevention and treatment of mental disease is certainly questionable.

The Malarial Therapy of General Paralysis and Other Conditions. By William H. Kupper, M.D. Cloth. Price, $2.25. Pp. 155, with 8 illustrations. Ann Arbor: Edwards Brothers, Inc., 1939.

This monograph is an excellent reference manual for any physician treating neurosyphilis, especially dementia paralytica. It is essentially a review of the literature. It contains many important and practical points regarding the life cycles of the tertian, quartan and estivo-autumnal parasites. There is considerable pertinent discussion regarding the anopheline mosquito. The history of malarial therapy for dementia paralytica is also given. The author reviews the various causes of cure in the malarial therapy of dementia paralytica. The latter is compared with other treatments such as relapsing fever, sodoku, typhoid vaccine, saprovitan, sulfur, artificial hyperpyrexia, tryparsamide and artificial fever plus tryparsamide. The author's attempt to enhance the value of malarial therapy by citing instances of treatment for nonsyphilitic diseases with malaria is not necessary. There is a detailed bibliography.

Getting More Out of Life. By Joseph Jastrow, Ph.D., LL.D. New edition. Cloth. Price, $2. Pp. 312. New York: Emerson Books, Inc., 1940.

This book presents a strangely reminiscent picture. While no statement is made on the jacket or on the volume itself that the book has previously been published, the material is identical with, or much resembles, similar material published elsewhere by the same writer. Dr. Jastrow is one of the older psychologists and is the teacher of many prominent nonmedical teachers in this field. He has been a prolific writer, both scientifically and, in recent years, popularly, and his ideas are sound and conservative. The present volume deals with a number of psychologic observations, some beliefs are exploded and some interesting angles of the science are explained. The general point of view is to help people better to employ their own mental faculties and to explain mild abnormalities of the mind. It is not particularly inspirational, but it is interesting and, from the point of view of the lay psychologist, scientifically sound. It has the good point of not professing to aid the patient in any self treatment.

A Handbook of Radiography. By John A. Ross, M.A., M.R.C.S., L.R.C.P., Radiologist, Warrington Infirmary, Warrington. Cloth. Price, 7s. 6d. Pp. 126, with 67 illustrations. London: H. K. Lewis & Co., Ltd., 1940.

This interesting, concise book on radiographic technic is attractively presented in a small volume. Interleaved are a number of blank pages for notations. The book is essentially a handbook on the technical and practical radiographic methods for technicians and students. The various technical maneuvers are explained, and an effort is made to make clear the purpose of each stage of technic. There is no discussion of physics included. Such a book will be valuable in the hands of most technicians. Many physicians who do occasional radiographic work should find it useful.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

AMINOPHYLLINE FOR CORONARY THROMBOSIS

To the Editor:—In a case of coronary thrombosis, how long is it advisable to give aminophyllin? Can this drug do harm if given for months?

M.D., New York.

ANSWER.—Aminophylline may be continued for weeks or months after an attack of coronary thrombosis without harm as far as is known, provided there is no disagreeable reaction from its use. In small doses, such as are commonly given, 1½ grains (0.1 Gm.) three times a day, there is probably but little benefit. In the larger dosage of 3 grains (0.2 Gm.) or more, three or four times a day, there is indication experimentally and in some instances clinically that it may be helpful provided these larger doses do not upset the stomach. However, there is justified skepticism about the value of the drug as a routine measure in the healing process of coronary thrombosis. Many patients have done extremely well without it. Other patients have done poorly with it. A few patients have discomfort while taking it. It is more indicated in the presence of persistent symptoms of angina pectoris or disturbed breathing than in other conditions. Some patients have taken it daily for years in small doses without any evidence of harm but also without much proof of benefit. It is probably sensible to try its effect in the presence of such symptoms as mentioned for a week or two but not to continue indefinitely if there seems to be no favorable result. Intravenously, in an emergency, it is much more effective, particularly for Cheyne-Stokes respiration.

DISTURBED VISION AND FORMALDEHYDE EXPOSURE

To the Editor:—On May 21 a man aged 60 consulted me about his vision. He had been working for the past five and one-half months in a plant for making plastics. He said his eyesight had been failing rapidly for the past few days. His employer found fault with his color mixtures and it was difficult for him to do his work. His work consisted of mixing formaldehyde, urea and sulfuric acid together in certain proportions, cooking it and drying it and grinding it. He carried on this work in a basement room measuring about 15 by 25 feet. This room was poorly ventilated. Examination showed his vision to be 10/200 in each eye with the best refraction I could give him. The vessels of the fundus were dilated and tortuous with pigmented areas around the macula of the left eye. The patient has a history of a high blood pressure varying from 160 to over 200. This might account for some of the disturbance. Many plants making plastics use these same ingredients. Have others been affected as this man has been? Do you think it was the formaldehyde fumes that caused the trouble? Would good ventilation and rigid cleanliness be sufficient preventives?

H. N. Leavitt, M.D., Minneapolis.

ANSWER.—The key to this situation possibly may reside in the fact that most commercial formaldehyde contains wood alcohol as an impurity. Given in sufficient amounts, this is quite capable of inducing the impaired vision mentioned. In similar situations there have been found contracted visual fields, scintillating scotomas, dilated, immobile pupils, retinitis, atrophic nerve heads, damage to extra-ocular muscles and ptosis. Suitable inquiry should be made as to a possible methyl alcohol content in the solution of formaldehyde utilized in the preparation of the urea formaldehyde resin. Heat, as mentioned in the query, naturally increases the quantity of formaldehyde gas introduced into the atmosphere. However, formaldehyde gas chiefly acts locally, producing conjunctivitis, coryza, bronchitis and skin injury. Unless some or all of these disturbances have arisen, it is somewhat unlikely that the ocular damage described may be associated with the formaldehyde. Since formaldehyde is one of the most irritating gases of industry, suitable exhaust equipment should obviate any concentrations higher than 20 parts per million of air as breathed by workmen. Some opportunities exist in the manufacture of this type of resin to use completely enclosed systems, involving no escape of gas into the atmosphere. It is desirable that no direct contact be permitted between the skin and the materials of this synthetic resin. Finished resin occasionally induces a dermatitis among those exposed, since some persons respond to minute traces of the resin dust.

PAIN AND ESCHAR AFTER INTRAGLUTEAL INJECTION

To the Editor:—A man aged 50 received on October 8 his ninth injection of 2 cc. of iodobismitol given intragluteally. On the introduction of the needle he complained, slightly more than his custom, of pain. He is not a hypersensitive nervous patient. As is my method, the barrel of the syringe was drawn up to be sure the point of the needle was not in a blood vessel. At once after receiving the injection the patient showed some shock, weak pulse, pallor and clammy sweating. Remaining in the office for a time he seemed to get approximately 75 per cent relief from pain and shock. Soon, however, I was called to his home, and the man was complaining of much pain in the gluteal region and some along the distribution of the sciatic nerve. Numerous visits were made to the home, and besides narcotics for pain local treatment, e. g. injections of physiologic solution of sodium chloride into the site of the pain and injections of procaine hydrochloride, was given. There was no loss of power or of sensation, but terrific pain continued, some relief beginning after about only one week. At a considerable distance from the site of injection there gradually developed what seemed to be an ecchymosis as from an outpouring of blood into the subcutaneous tissues. He has recovered from the pain and has returned to work after losing about two weeks. At present over the region of the great trochanter is a dry eschar about 3 by 4 inches. To all appearances this represents dead tissue. The results from present appearance will probably be formation of fibrous tissue beneath this eschar, the eschar being gradually cast off. What happened in this case? I feel that I did not get into the blood vessel with the point of the needle. Did I injure the nerves around a blood vessel, causing the severe pain which results from sudden lack of a good blood supply to any part, as from the ischemia of the heart muscle in angina pectoris or that of intermittent claudication? I have been using iodobismitol for many years, and this is the first trouble; it was severe. Did the patient have some vascular spasm resulting in thrombosis, which in turn gave rise to the pain and to the death of tissue resulting in the black eschar? This is to all appearances gangrene of the skin and immediately underlying tissues.

John A. Bradley, M.D., Steubenville, Ohio.

ANSWER.—Possibilities that come to mind are (1) that the injection of the drug involved a nerve and blood vessel, (2) that some solution other than iodobismitol was injected.

Reports in the literature (Gammel, John A.: Arterial Embolism: An Unusual Complication Following the Intramuscular Administration of Bismuth, THE JOURNAL, March 26, 1927, p. 998) indicate that an occlusion of the blood vessel may follow an intramuscular injection and result in what appears to be at first an infection at the site of the injection but eventually results in a slough. This reaction is not accompanied by immediate severe pain and does not appear for twenty-four or more hours after the injection.

The immediate pain and apparent shock after the injection would suggest that something other than iodobismitol was injected, possibly an escharotic because of the resulting eschar. Phenol or mercuric iodide is capable of producing such a reaction.

IRIDECTOMY

To the Editor:—A patient aged 75 had a preliminary iridectomy done a month ago. Within the past week I have noticed that the anterior chamber has become shallow, probably because of swelling of the lens; however, there was no break in the anterior capsule at the time of the iridectomy and he made an uneventful postoperative recovery. The tension with the Schiötz tonometer was 19. The cataract appeared to be mature at the time of the iridectomy. Can you give me an opinion as to the probable cause of the shallowness of the anterior chamber and its probable duration? I realize the section could be enlarged by using scissors.

M.D., Ill.

ANSWER.—In all probability the shallowness of the anterior chamber was due to swelling of the lens, which at the time of the iridectomy was not completely mature. The absorption of water by the fibers of the lens increases the volume of the lens, and the resultant expansion is always anterior, because of incompressibility of the vitreous humor. As the last lens fibers become more opaque, they lose their aqueous content and the anteroposterior diameter of the lens decreases, causing the anterior chamber to become deeper. But this process is slow and may take many months.

Operation on a swollen lens with a shallow anterior chamber involves certain risks that can be avoided by waiting for the chamber to deepen. In the first place, the incision is apt to be difficult, because of the endeavor to avoid the iris or irregular injury to the capsule. Consequently, the incision may lie too near the cornea; it is frequently too small. Improper length must not be counted as a great mistake, for the incision can always be lengthened with scissors. The resultant wound, however, is not as smooth as though the entire incision were made with a Graefe knife. In the second place, if the lens is to be removed within its capsule it is difficult to grasp the anterior capsule with any forceps, and the purpose of the operation is likely to be defeated. Therefore extracapsular or suction extraction is the method of choice with a swollen lens. But, in the hands of the experienced operator, neither produces as good results as does a smooth intracapsular extraction.

EPHEDRINE DERIVATIVES, BARBITURATES AND DIPLOPIA

To the Editor:—A patient aged 31 complains of diplopia for three weeks and bronchial asthma for twelve years. During the past twelve years he has taken many remedies for relief of his asthma. For the past year he has taken propadrine hydrochloride (Sharpe and Dohme), six to eight ¼ grain (0.04 Gm.) capsules daily; also an occasional inhalation of epinephrine spray. The previous year he took large quantities of ephedrine and amytal capsules. Are there any reports on propadrine hydrochloride or ephedrine causing diplopia? His eyes when checked by a good eye specialist were found to have normal vision and normal fields. There is some damage to the third and sixth cranial nerves. There are no other neurologic abnormalities, and the blood Wassermann reaction is negative.

Frederick A. Shore, M.D., Ventura, Calif.

ANSWER.—There are no reports in the literature pointing to diplopia being caused by propadrine hydrochloride, ephedrine or their derivatives. This does not preclude the possibility that ephedrine-like compounds may produce disturbances in vision through their well known effects on the central nervous system. The use of barbituric acid and its derivatives has caused complications too numerous to mention. In the French literature there is a report in which a case of acute barbiturism simulating encephalitis lethargica with diplopia is described. In the American writings Lundy and Osterberg commented on the occurrence of dilated pupils and nystagmus and included the report of Lyons, who in 1907 reported a case in which diplopia occurred within two hours after the patient took a barbituric acid derivative.

References:

Sorel, R., and Lasserre, J.: Le barbiturisme aigu simulant l'encéphalite léthargique avec diplopie, *Ann. Fac. franç. de méd. et de pharm. de Beyrouth* **1**:323 (Nov.-Dec.) 1936.

Lundy, J. S., and Osterberg, A.: Review of the Literature on the Derivatives of Barbituric Acid, *Proc. Staff Meet., Mayo Clin.* **4**:Supp. **2**:386 (Dec. 19) 1929.

Lyons, E.: An Experience with Veronal, *Brit. M. J.* **1**:259, 1907.

TREATMENT OF ICHTHYOSIS

To the Editor:—Is there a new or different treatment for ichthyosis?

George E. Gardner, M.D., Lancaster, Ohio.

ANSWER.—There is no accepted new treatment of ichthyosis. There are only a few reports of success in treating one or more cases, and these lack substantiation by others.

Niizawa reports (Ueber drei interessante Fälle von Ichthyosis Vulgaris und die neue Behandlungsmethode, *J. Orient. Med.* **27**:29 [Sept.] 1937) three cases in one family, brothers aged 4, 6 and 8 years. They were given intracutaneous injections of blood serum which had been exposed in a quartz container for thirty minutes to ultraviolet radiation. From twenty-one to twenty-four doses were given, 0.3 cc. each time. After this series there was remarkable improvement in all the children.

P. S. Robinson (Congenital Ichthyosis, *Southwest. Med.* **21**:41 [Feb.] 1937) describes a severe congenital ichthyosis which he treated with thyroid extract one-tenth grain (0.0065 Gm.) a day for the first three months, then one-fifth grain (0.013 Gm.) daily up to 6 months of age, and after that one-half grain (0.03 Gm.) daily. The skin improved and the ectropion disappeared. Some thickening of the skin and branny scaling persisted.

Kylin (Ein Fall von Ichthyosis mit erfolgreicher Behandlung durch Hypophysentransplantation, *Svenska läk.-tidning* **35**:1123 [July 8] 1938, reviewed in German in *Zentralbl. f. Haut- u. Geschlechtskr.* **60**:665, 1938) reports a cure of ichthyosis by transplantation of the hypophysis cerebri of a calf. After only fourteen days the skin had become normal in appearance.

TREATMENT AND PROGNOSIS IN CARCINOMA OF BREAST

To the Editor:—What is the preferred treatment of a patient 67 years old in apparently good health who has a breast tumor as big as a walnut with a dimpling of and attachment to the breast with no palpable glandular involvement? Clinically it is a carcinoma. What is the percentage of five year cures in similar cases by (1) radical operation and roentgen therapy and (2) mastectomy and roentgen therapy?

Samuel Chornasek, M.D., Dickinson, N. D.

ANSWER.—Radical mastectomy is the treatment of choice for operable mammary cancer. This procedure should be preceded by biopsy and frozen section only when the clinical diagnosis is in doubt. When the axillary glands are proved to be free of cancer by microscopic examination the cures by radical mastectomy amount to approximately 70 per cent. There is a difference of opinion on the value of prophylactic postoperative irradiation. One school of thought considers that prophylactic postoperative irradiation after radical mastectomy for a strictly operable lesion in which the lymph nodes are not involved is not indicated. Others believe that the radical operation should be followed by prophylactic roentgen therapy in all cases. The comparative statistics of radical mastectomy alone and radical mastectomy followed by postoperative irradiation vary markedly as reported by different authors. No comprehensive statistics in the literature stating the five year cures by simple mastectomy combined with postoperative irradiation have been found.

EXTENSOR REFLEX OF BIG TOE FROM YAWNING SUBSEQUENT TO HEMIPLEGIA

To the Editor:—Am I right in assuming that I have observed a new Babinski reflex sign, as I could not find this sign mentioned in the literature accessible to me? A man suffered a cerebral hemorrhage of the facial hemiplegia alternans (Millard-Gubler syndrome) type on July 10, 1940. After four weeks it evolved into the usual chronic type with spasmis of the whole right side of the face and contractured paralysis of the left arm and leg, suggesting pontile lesion. I have observed that when he yawns the paralyzed left foot and hand show the typical Babinski phenomena d'ensemble accompanied by dorsal flexion of the first toe and respons finger. The same patient exhibits the coughing sign in a pronounced way even while standing. I would greatly appreciate your opinion whether this sign was ever recorded in the medical literature.

Hilary Leyser, M.D., Cleveland.

ANSWER.—No mention of the Babinski sign, as such, as produced by yawning has been found. However, stretching and extensor movements which probably include extension of the big toe are described as being produced in persons with hemiplegia by yawning. Samuel Brock (The Basis of Clinical Neurology, Baltimore, William Wood & Co., 1937, p. 314) says that "it would seem that extrapyramidal pathways carry these posture-changing impulses to the anterior horn cells, since stretching movements occur in the hemiplegic limbs of patients, in which the usual signs of defect of the pyramidal tract are easily demonstrated." James Purves-Stewart (The Diagnosis of Nervous Diseases, ed. 5, London, E. Arnold & Co., 1920, p. 87) states that automatic extension movements "are often well seen in the paralyzed limbs in a case of severe hemiplegia when the patient yawns or is tickled."

EUCUPIN NOT SUITED TO PARAVERTEBRAL INJECTION

To the Editor:—A white man aged 47 complains of pain in the lower portion of the lumbar region radiating to the entire left lower extremity especially toward the lateral aspect approximately three and one-half months following a left paravertebral infiltration with what he understands to have been eucupin (cantonic eucupin base 0.1 per cent, ethylaminobenzoate 3 per cent and benzyl alcohol 3 per cent in oil of sweet almond. Eucupin is isoamylhydrocupreine). This treatment was administered for a sprained back. Examination reveals no sensory or motor disturbance. There was no evidence of spasticity, deformity or abscess formation in the region which was infiltrated. Please comment on any undesirable reaction from the use of eucupin in oil or nerve injury from this procedure.

M.D., Michigan.

ANSWER.—Eucupin has been carefully studied in various laboratories and according to a recent but unpublished report it tends to cause fibrosis in the tissues. Proctologists like its prolonged anesthetic effect but say that great care must be taken to avoid necrosis. The discoverer of eucupin, Morgenroth (1912), emphasized its antiseptic as well as prolonged anesthetic action. It was the subject of a special article by de Takats, published in *Surgery, Gynecology and Obstetrics* (**43**:100 [July] 1926). It is easy to understand that it is not suitable for paravertebral injection, as the resulting fibrosis may compress and irritate the nerve.

WELTMANN SERUM COAGULATION REACTION

To the Editor:—In reference to the question regarding the Weltmann serum coagulation reaction (January 11, p. 176): After extensive study of the test, I agree that it has not fulfilled the original expectations in differentiating between intrahepatic and extrahepatic jaundice. It is of little value in diagnosing parenchymatous or cirrhotic processes in the liver. The test is, like the sedimentation rate and the leukocyte count, a nonspecific indicator of disease. I also agree that the test can in no way replace a careful history and physical examination. However, in the publications of others and in unpublished data of my own, the test has been found a more reliable indicator of the presence of an inflammatory process than the sedimentation rate. False positives (increased speed of sedimentation in absence of disease) are common for the sedimentation rate. False shortening (coagulation band of less than 4) rarely if ever occurs with the Weltmann test. If a coagulation band of 4 or less is found and no other laboratory, roentgenologic or physical finding explains the patient's symptoms, it is best not to make a diagnosis of a functional disturbance but to recheck and make additional tests until some organic process is found. In certain carcinomas of the digestive tract the coagulation band (K. B.) is shortened. Penetrating posterior wall gastric or duodenal ulcer should be suspected with a positive history, despite negative roentgen ray evidence, if the coagulation band is shortened. In pneumonia the coagulation band is shortened before physical signs become definite, and lengthening of the band is evidence of improvement even if physical signs persist. Further investigation is required to establish the true value of this test. I believe it will prove as useful as leukocyte counts and may replace the sedimentation test.

Manfred Kraemer, M.D., Newark, N. J.